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ABSTRACT

The primary objective of the study was to assess and summarize core aspects of the career development of American youth. A nationally representative sample of approximately 32,000 8th, 9th, and 11th grade students in 200 schools participated in the study in the Spring of 1973. This report focuses on the more salient findings of the study with results presented in terms of what students say, do, and know about career development. A major finding is the sharp contrast between need for help with career planning and the help students have been receiving. In general, study results support the current emphasis on career guidance and career education. Because the study is unique both in its focus and its national scope, results should provide educational policy makers and planners at both the national and local levels with a new perspective on the career development status and needs of students. (Author)

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A NATIONWIDE STUDY OF STUDENT CAREER DEVELOPMENT: SUMMARY OF RESULTS

(Manuscript preprint of ACT Research Report No. 61)

Dale Prediger, John Roth, & Richard Noeth

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ABSTRACT

Career education and career guidance are currently high-priority items on the national agenda. Many believe student career development to be the unifying theme and primary goal of career education efforts. It is in this context of national concern that ACT's "Nationwide Study of Student Career Development" was launched. The primary objective of the study was to assess and summarize core aspects of the career development of American youth. A nationally representive sample of approximately 32,000 8th, 9th, and 11th grade students in 200 schools participated in the study in the Spring of 1973. This report focuses on the more salient findings of the study with results presented in terms of what students say, do, and know about career development. A major finding is the sharp contract between need for help with career planning and the help students have been receiving. In general, study results support the current emphasis on career guidance and career education. Because the study is unique, both in its focus and its national scope, results should provide educational policy makers and planners at both the national and local levels with a new perspective on the career development status and needs of students.

NATIONWIDE STUDY OF STUDENT CAREER DEVELOPMENT: SUMMARY OF RESULTS

Dale Prediger, John Roth, & Richard Noeth[1]

I. BACKGROUND, PURPOSE, AND FOCUS OF STUDY

Career education, with student career development as a central theme, is currently a high-priority item on the national agenda. Federal, state, and local resources are being allocated to curriculum development, pilot projects, field tests, and program implementation. Accompanying this thrust is a growing awareness--both among professional educators and the publics they serve--of the importance and complexity of the career choice process. Increasingly, work is being recognized as one of the central experiences of Man and Woman--as the making of a life as well as the making of a living (Super, 1957).

A career can be defined briefly as encompassing the educational and vocational strands of life--the unfolding series of educational and vocational experiences and decisions related to a person's productive role in society. As viewed in the context of career development theory, career-related experiences and decisions begin early in life and accumulate in their effect on subsequent decisions. The career-related decisions required of adolescents in today's society are especially difficult. Specialists in guidance have long recognized the dilemma inherent in the increasing complexity of career options and the decreasing visibility of work as its location shifts from neighborhood main streets to industrial complexes and high-rise office buildings. Students apparently feel the impact of this dilemma, as one of the most salient findings of this study is the degree to which students, both boys and girls, recognize a need for career guidance. Recent labor market difficulties of college graduates, the growing recognition that "college" is just one of many socially acceptable post-high school options, and the impact of the women's liberation movement have no doubt contributed to this student awareness.

Because of its potential contribution to the career development of students, career guidance is being recognized as a major responsibility of the nation's schools. The time-extensive, developmental nature of career-related experiences and decisions point to the need for <u>developmental</u> career guidance programs rather than the one-shot, square-peg, square-hole vocational counseling of the past.

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[1] The authors, who also served as co-directors of the study, are research psychologists in the Research and Development Division of ACT. The assistance of Bert Westbrook, Associate Professor of Psychology, North Carolina University, in the development of the instruments used in the study is gratefully acknowledged. Jane Bergsten and David Bayless, sampling statisticians at Research Triangle Institute, provided invaluable help with sample design, selection, and weighting. Finally, we are grateful to Leo Munday, Vice President of the Research and Development Division of ACT, for his administrative support and helpful comments on an early draft of this report.

These programs, which involve community resources, the classroom, and guidance groups in addition to one-to-one counseling, are just now beginning to appear in significant numbers in the nation's schools. Their effects are yet to be felt.

Purpose of Study

It is in the context of this national interest and the new developments in career education and career guidance that ACT 's "Nationwide Study of Student Career Development" was launched. The primary purpose of the study was to assess and summarize core aspects of the career development of American youth enrolled in grades 8, 9, and 11. This is a particularly crucial period in the career development of students, one in which a number of experiences and decisions related to the post-high school transition occur. Certainly, information on the preparation of students for these decisions is desireable as a basis for determining what is being done now and what needs to be done.

Because the study is unique, both in its focus on career development and in its national scope, we believe it can provide educational policy makers and planners with a new perspective on the career development status and needs of American youth. In addition, study results provide baseline data that can be used to assess the impact of the career education/guidance programs now being implemented.

Focus of Report

Part III of this report focuses on the more salient findings of the study. Study results, which are based on a nationally representative sample of 32,000 students in 200 schools, are organized around the following three themes:

1. What students say about their career development status and needs.
2. What students have done about occupational exploration and career planning.
3. What students know about occupations and career planning.

Thus, information concerning student feelings, plans, reactions, activities, experiences, and knowledge is brought to bear in the assessment of career development. We believe that each type of information must be considered in the context of the others. Hopefully, a consistent and interlocking pattern of results will emerge.

Considerable thought was given to the manner in which study results were to be reported. At the most basic level, results exist on magnetic tape in the form of student responses to the 267 questions on the survey instrument. Although many of these responses have intrinsic interest, a complete presentation was beyond the scope of this report. Only responses to questions that were meant to stand alone or that illuminate the meaning of scores on the ten survey tests and

inventories are reported here. Thus, study results are presented in the form of (a) student responses to selected questions (a total of 61); and (b) student performance on ten scales measuring core components of career development (e.g., career planning knowledge and involvement, exploratory occupational experiences, and occupational knowledge).

Due to the costs involved, analyses for the present report have been limited to grade-by-sex groups. However, because of the stratification variables used in the national sample, study results are potentially available by region of country, size of community, socioeconomic status of community, and racial-ethnic group--plus certain combinations of these variables. Also available for the national sample, but not reported here, are scores on six ability tests and six interest scales.

Grade 9 results were generally congruent with the trends across grades 8 and 11. Hence, attention is focused on grades 8 and 11 in this report in order to simplify the tabular presentations. Readers wishing to inspect study results in detail are referred to Appendix D of the Handbook for the ACT Assessment of Career Development (ACT, 1973). The Handbook provides results by sex group for grades 8, 9, and 11 and includes means, standard deviations, and frequency distributions for each of the ten scales along with frequency distributions for many of the individual items discussed in this report.

Finally, no attempt has been made in this report to relate findings to specific theories of career development (e.g., see Osipow, 1968) or to previous large-scale studies of American youth (e.g., Bachman, Kahn, Mednick, Davidson, & Johnson, 1967; Flanagan, Shaycoft, Richards, & Claudy, 1971; Hilton, 1971; Measurement and Research Center, Purdue University, 1972a, 1972b; U.S. Department of Labor, 1971a, 1971b). Although these studies cover only a few of the components of career development assessed in the present study, five of them (Bachman et al., Flanagan et al., Hilton, and the U.S. Department of Labor Studies headed by Parnes) are longitudinal in nature and, hence, provide information on the educational and occupational experiences of their subjects over a period of time. In a sense, they trace career development in terms of its external indicators. That is, the studies report what happened to their subjects, career-wise. This is invaluable information to have in any study of career development, and we look forward to obtaining similar information for our nationwide sample.

Undoubtedly, the study most closely related to one reported here is the National Assessment of Education Progress (NAEP) study of career and occupational development scheduled for completion in 1975 (NAEP, 1973). Because of its broad coverage of career development components (NAEP, 1971) and the wide age range to be included in the sample (i.e., 9, 13, and 17 year olds plus young adults), the NAEP study should provide valuable insights into the career development of American youth.

II. INSTRUMENTATION AND NATIONWIDE SAMPLE

This section of the report briefly describes the instruments used in the nationwide study--their rationale, development, and characteristics. An overview of the national sample is also provided, including stratifying variables and data collection procedures. Readers who are primarily interested in study results rather than methodology should refer directly to Part III.

Instrumentation for the Nationwide Study

The instruments used in the nationwide study focus on core aspects of career development that can be economically and objectively measured through use of standardized group assessment procedures. These instruments should not be viewed as covering all of the important components of career development. Perspective on the components of career development that are and are not assessed is provided by considering the rationale used in developing the instruments and by inspecting the content outline presented later in this section.

Together, the instruments used in the study constitute a major portion of ACT's Assessment of Career Development (ACD). Hence, for the sake of convenience, "ACD" will be used in further references to them. A comprehensive description of the ACD, including its psychometric characteristics, is provided by the Handbook for the ACT Assessment of Career Development, (ACT, 1973).

Rationale

Initial work on the ACD was begun by Bert Westbrook of North Carolina State University and staff members at ACT in 1967. By early 1970, Westbrook had produced the Cognitive Vocational Maturity Test (Westbrook, Parry-Hill, & Woodbury, 1972). Concurrently and separately, ACT researchers had developed inventories assessing career-related preferences and experiences (ACT, 1968, 1972). Shortly thereafter, Westbrook and ACT jointly undertook the construction of a comprehensive measure of vocational maturity.

Progress on this project was essentially stalled early in 1972 at the point of finalizing the dimensions of vocational maturity that should be assessed. Relevant aspects of vocational maturity had been identified but the necessary theoretical rationale was incomplete. In addition, there were conflicting definitions (both theoretical and operational) of what should be measured.

It was not until attention was shifted to the practical applications envisioned for the ACD that further progress was made in its development. Efforts to measure a psychological construct called "vocational maturity" were replaced by an emphasis on collecting those items of information most likely to help counselors assess the career development status and needs of students. The decision to make this more straightforward approach was also based on the viewpoint that career development is primarily an educational concern involving

the assessment of achievement rather than a psychological concern requiring the measurement of mental traits or dimensions of personality. Thus, the resulting instrument is in many ways similar to an achievement test with achievement defined in terms of amount of knowledge and number of career-related experiences of various kinds.

The underlying structure of the ACD content is based on the following major career development tasks facing today's youth: occupational awareness, self-awareness, and career planning. Detailed content specifications drawn from career development theory and guidance practice were written for these task areas. These specifications are presented in the ACD Content Outline following the section on construction. The outline makes clear the attention given to assessing both student knowledge and experiences. Neither was considered, by itself, to be a sufficient indicator of career development. Indeed, correlations between measures in these two domains suggest that the knowledge and experience components of career development are relatively independent (ACT, 1973).

Assessment of the occupational awareness of students necessitated the development of a framework for organizing the world of work. This framework was based on a synthesis of the personal orientations in Holland's career development theory (Holland, 1973), Worker Trait Group dimensions in the Dictionary of Occupational Titles (U.S. Department of Labor, 1965), results of research with various interest inventories, and research on the characteristics of workers in various occupations. The 6 "occupational clusters" and 25 "job families" resulting from these efforts parsimoniously cover the entire world of work. They appear in Table 7 of this report.

Construction and Scale Characteristics

ACD items were written, tried out, revised, and finally selected through a series of steps occurring over several years. Prior to the joint effort by Westbrook and ACT, early forms of ACD components had been administered to 13,200 students in grades 6-9 and 20,000 entering freshmen in community and technical colleges. Final stages of development involved three separate tryout samples and more than 4,900 students attending 26 schools in 10 states. Eleven consultants, primarily practitioners, reviewed and reacted to various versions of ACD components. The ACD scales developed through these efforts are listed on the next page. The items, arranged according to the ACD Content Outline, appear in the appendix.

ACD Scales

1. Occupational Characteristics
2. Occupational Preparation Requirements
3. Career Planning Knowledge
4. Career Planning Involvement
5. Exploratory Occupational Experiences Summary Scale (not reported here)

Exploratory Experiences by Occupational Cluster

6. Social, Health, & Personal Services
7. Business Sales & Management
8. Business Operations
9. Technologies & Trades
10. Natural, Social, & Medical Sciences
11. Creative & Applied Arts

Information bearing on the psychometric characteristics of ACD scales is provided in the Handbook for the ACT Assessment of Career Development (ACT, 1973). Only a brief overview is provided here. Internal consistency reliability coefficients ranged from .61 for the relatively short Occupational Preparation Requirements Scale to .93 for the 90-item Exploratory Occupational Experiences Summary Scale. The median coefficient for grades 8 and 11 was .80. All scales demonstrated ample floor and ceiling for the grade range in the study. Analyses of completion rates show that the cognitive portions of the ACD operate essentially as power tests and that students have sufficient time to complete the ACD experience inventories.

CONTENT SPECIFICATIONS FOR ACD

ACD Coverage	ACD CONTENT OUTLINE
	I OCCUPATIONAL AWARENESS (162 items)
	A. Occupational Knowledge: Knowledge of a broad range of occupations distributed across all levels of education/training. Test items cover more than 200 occupations selected from each of six comprehensive occupational clusters.[1] (Unit 1, 72 items)
1 subscore	1. Occupational Characteristics (54 items)
	a. Duties (25 items)
	b. Psychosocial aspects: Working conditions, work schedules, job values associated with occupations, etc. (14 items plus 9 duties items on the relation of occupations to the data/ideas/people/things dimensions)
	c. Worker attributes associated with specific occupations: Abilities, interests, skills, etc. (15 items)
1 subscore	2. Occupational Preparation Requirements (18 items)
	Amount and type of training/education usually associated with various occupations (e.g., apprenticeships, four-year colleges, vocational-technical schools on-the-job training; community colleges, and occupations related to high school courses)
Scores for each of 6 clusters and a general summary score	B. Exploratory Occupational Experiences: Involvement in experiences related to activities typical of occupations in each of the six occupational clusters.[1] (Unit 6, 90 items)
	1. Formal Experiences: School extracurricular activities, part-time jobs, community clubs, religious and service groups, etc.
	2. Informal Experiences: Peer group activities, hobbies, pastimes, etc.

[1]Cluster titles are:
Social, Health, & Personal Services
Business Sales & Management
Business Operations
Technologies & Trades
Natural, Social, & Medical Sciences
Creative & Applied Arts

Response distributions for--

II SELF AWARENESS (20 items)

A. Preferred Job Characteristics (Unit 2, 7 items)

3 self-report items

1. Job Values: Students select their most and least important job values from a group of 6.

4 self-report items

2. Working Condition Preferences: Students select preference for each of 4 bipolar pairs of working conditions.

B. Career Plans (Unit 3, 4 items)

1 self-report item

1. Educational Plans

2 preferences

2. Occupational Preferences: Students indicate which job families (from list of 25) correspond to their 1st and 2nd occupational preferences.

1 self-report item

3. Certainty of Occupational Preferences

9 self-report items

C. Perceived Needs for Help with Career Planning: Students react to "Help Wanted Check List" containing nine types of help schools frequently provide (Part of Unit 4, 9 items)

III CAREER PLANNING AND DECISION MAKING (78 items)

1 score & response distributions for 9 items

A. Career Planning Knowledge: A sampling of facts, concepts, and understandings useful in career planning as suggested by career development theory and guidance practice. (Unit 5, 40 items)

1. Knowledge of Basic Career Development Principles (9 items)

a. Continuous nature of career development and decision making. (3 items)
b. Impact of work on one's life. (3 items)
c. Multipotentiality of people for occupations. (3 items)

2. Knowledge of Reality Factors. (10 items)

a. Post-high school education and training: Types of programs, college not the only option, types of financial aid, etc. (5 items)
b. Labor market functioning and trends: Large number of women in labor force, blue collar to white collar trend, proportion of jobs requiring college, etc. (5 items)

III A. 3. Knowledge of the Career Planning Process. (21 items)

a. When to start: e.g., importance of early planning. (3 items)
b. How to proceed. (18 items)

(1) Sources of help and information: People, agencies, printed and A-V material, etc.
(2) Career exploration: Importance of self/career exploration, opportunities for exploration, etc.
(3) Career decision making: Role of goals, values, options, utilities, likelihoods, etc.

1 score (1st 32 items)

B. Career Planning Involvement: Inventory of student involvement in exploratory and planning experiences available in the school and community both on a formal and informal basis. (Unit 4, 38 items)

1. Seeking Information (11 items)

a. Reading, viewing, and consulting references. (4 items)
b. Talking and discussing. (7 items)

2. Doing and Experiencing. (11 items)

a. Observing workers and work setting. (2 items)
b. Engaging in self/career exploratory activities. (6 items)

(1) Hobbies and clubs, school or community activities
(2) School courses
(3) Part-time work experiences

c. Practicing employment seeking skills: Role-played a job interview, wrote a resume', etc. (3 items)

3. Focusing Information and Experience Resources on specific occupational preferences. (7 items)

4. Making Career Plans. (9 items)

a. Planning activities: Planned course work to fit goals, worked out a plan to finance post-high school activities, etc. (3 items)
b. Self-evaluation of career planning: Knowledge of steps involved in carrying out career plans, consideration given to psychosocial factors, etc. (6 items)

response distributions for 6 items

response distributions for 7 items

IV REACTIONS TO CAREER GUIDANCE EXPERIENCES: Student's perception of help received from various aspects of school career guidance program; e.g., information resources, guidance groups, teacher-initiated activities involving subject-related occupations. (Part of Unit 4, 7 items)

The Nationwide Sample

Study results are based on a multistage probability sample of 8th, 9th, and 11th grade students tested in the Spring of 1973. Approximately 32,000 students in 200 schools participated in the study.

Sampling Procedures

The target population for the study was defined as all full-time 8th, 9th, and 11th grade students enrolled in public or Catholic schools in the United States in the Spring of 1973. A two-stage probability sample of schools was selected by Research Triangle Institute using sampling frame data developed for the National Assessment of Educational Progress. First, primary sampling units (PSU's) were selected from a frame consisting of a list of counties or groups of contiguous counties stratified by region, size of community (SOC), and socioeconomic status (SES). The four geographic regions were: Northeast, Southeast, Central, and West. The SOC strata were: (a) counties containing big cities; (b) counties making up the fringes around big cities; (c) counties containing medium sized cities; and (d) all counties not included in a, b, or c. The SES index used to construct substrata within the region-by-SOC strata was based on 1970 county census data such as housing value and rent.

Within each sample PSU, three samples of schools were independently selected, one sample for each of grades 8, 9, and 11. These were selected with probability proportional to the grade enrollment of the school. Each selected school had the option to test either all students in a specified grade or a random subsample (N=60) of the students in that grade. If the school elected to subsample, it was asked to send ACT an alphabetical list of all students in the grade. ACT then randomly selected the 60 students to be tested.

In all, 321 schools located in 79 PSU's were selected into the sample. Testing was completed in 201 schools, the remaining being unable or unwilling to test during the time period set for the study. Results from four of the 201 schools were not used because of administrative problems such as answer sheets being temporarily lost in the mail.

Within the 197 schools included in the sample, the vast majority of selected pupils completed the ACD. However, a small percentage of students did not take the battery at all. An additional group did not finish the ACD and the 12 accompanying ability and interest measures. A complete set of results was obtained from 28,298 students.

The procedures used in selecting the sample guaranteed each student in the defined population of chance of being selected into the sample. But because each student in the population did not have an <u>equal</u> chance of being selected, it was necessary to account for this unequal probability by assigning a weight to each selected student. The weight assigned to a sample student was the inverse of his/her probability of being selected into the sample.

Since not all selected schools participated in the study and since not all selected students completed the test battery, some adjustment was necessary to account for this non-testing. The adjustment was made by means of an additional weighting process. Within a school, students who had completed the ACD were assigned a weight that took into account those sample students who had not completed the ACD. Where whole schools were not tested, the school was matched with a similar nearby school that had participated in the study. Students in the participating school were assigned a weight to account for the non-tested school.

In this manner, each of the 28,298 sample students who completed the ACD was assigned a final weight made up of the product of the above three weight components. By weighting the sample data in this way, the results obtained in the study correctly reflect the characteristics of the defined population.

Data Collection Procedures

In the Fall of 1973, the principal of each sample school was mailed materials describing the study measures and the reports that would be provided to the school in return for their participation in the study. Follow-up letters and phone calls were made to ensure that each sample school understood what was involved. Schools then returned a form either agreeing or refusing to participate in the study.

Detailed directions for administering the ACD were provided in a test administrator's manual. For orientation purposes, a leaflet discussing several concepts related to career planning was provided for distribution to students in advance of the testing. All testing was completed by May, 1973, with final totals indicating that 201 schools in 33 states had participated in the study.

Tables 1 through 3 provide an overview of selected characteristics of the sample. A more complete description of the sampling procedures is provided by the report entitled "The National Norming of the Career Planning Program (Grades 8-11) and the Assessment of Career Development," available from the Publications Division of ACT.

TABLE 1

NUMBER OF STUDENTS IN SAMPLE BY GRADE AND SEX

Sex	Grade 8	9	11	Total
Male	4,384	5,342	4,623	14,349
Female	4,438	4,827	4,684	13,949
Total	8,822	10,169	9,307	28,298

TABLE 2

NUMBER OF SCHOOLS IN SAMPLE BY GRADE AND SIZE OF COMMUNITY

Size of community	Grade 8	9	11	Total
Counties containing big cities	13	17	14	44
Counties located in fringes around big cities	11	9	19	39
Counties containing medium sized cities	13	16	15	44
Remaining counties	24	22	24	70
Total	61	64	72	197

TABLE 3

NUMBER OF SCHOOLS IN SAMPLE BY GRADE AND REGION

Region	Grade 8	9	11	Total
Northeast	11	13	16	40
Southeast	18	17	20	55
Central	16	15	19	50
West	16	19	17	52
Total	61	64	72	197

III. WHAT STUDENTS SAY, DO, AND KNOW ABOUT CAREER DEVELOPMENT

Study results are summarized as they relate to what students say, do, and know about career development. However, the large amount of data obtained in the study precludes a complete discussion. For this reason, we have attempted to identify some of the more salient findings of the study, and, on occasion, to draw implications. This is an admittedly subjective process--one that might ideally be conducted by a panel of experts in education, career guidance, and public policy. The authors do not presume to constitute such a panel. Hence, the reader is reminded that value judgments with respect to the implications of this or that finding are the authors' and are certainly not inherent in the findings themselves. As noted in Part I of this report, detailed results are available for readers who wish to draw their own conclusions after inspecting the data.

Study results are reported in the form of graphs summarizing score distributions and tables summarizing student responses to specific questions. In order to provide proper perspective on the interpretation of these responses, the exact wording of the original questions is reproduced, whenever possible. In some cases, however, questions had to be paraphrased in order to fit within the tables of this report. For an exact representation of the questions, readers are referred to the appendix where ACD items are arranged according to the ACD Content Outline presented in Part II of this report. Each table includes a reference to the ACD Content Outline in order to specify the career development component covered by the items.

What Students Say about Their Career Development Status and Needs

Researchers sometimes forget that often the best way to find out what people think about something is ask them. After being repeatedly reminded of this by our consultants, we developed a number of self-report items and included them in the item tryout studies described in Part II. While it was not possible to use an open-ended response format with these items, the extensive item tryouts and the critiques by counselors participating in the tryout studies permitted a thorough review and revision of the response options prior to their use in the study. Responses to the questions focusing on career plans and student reactions to the career guidance help they have received are summarized in the tables that follow.

Student-perceived Needs for Help

One of the most striking findings of this study is the apparent receptivity of students toward help with career planning. As shown in Table 4, more than three-fourths of the nation's high school juniors would like such help, and the proportion is almost as high for 8th graders. In both grades, more girls than boys are looking for career planning help. If recognition of the need for help

with career planning is interpreted as an indicator of readiness, then American teenagers would appear to be anxious to get on with their career development.

Help with "making career plans" is by far the major area of need indicated by 11th graders, with "finding after-school or summer work" falling in second place. Far down on the list is "discussing personal concerns," the primary task for which many school counselors, in the past, have been trained.

Reactions to School Guidance Services

Student-expressed need for help with career planning is in sharp contrast to the help they feel they have received. Item 1 in Table 5 shows that only 13% of the 11th graders feel that they have received "a lot of help" with career planning from their school. Another 37% feel that they have received "some help." However, half of the 11th graders and slightly more 8th graders state that they have received little or no help with career planning. Yet, 85% of the 11th graders recognize that career planning must begin before the final year of high school (see Table 12). Thus, it would appear, a need exists that remains for the most part unfulfilled.

One explanation for the large number of students who feel they have received little or no career planning help might be the unavailability of school counselors. However, item 2 in Table 5 shows that only 3% of the 11th graders indicate that they do not have a guidance counselor. An overwhelming 84% say that they can usually or almost always see a counselor when they want to. The implication, then, is that many counselors are simply not providing help with career planning, either on a one-to-one basis or via group guidance activities. Perhaps time constraints and conflicting responsibilities are the chief cause. However, we believe that many counselors and administrators have failed to accept and communicate the topic of "career planning" as an appropriate responsibility of the school and, as a result, students do not expect or request help with career planning.

Table 6 summarizes student reactions to some of the more common career guidance activities described in text books and implemented in schools. Item 1 supports the notion that many counselors are not providing career guidance help--for whatever reason. Over half of the 11th graders (56%) indicate that they received little or no help with career planning via discussions with counselors. As would be expected, the percentage is substantially higher for 8th graders. The number of 11th graders indicating that they had received some help or a lot of help from counselors (43%) is somewhat lower than the number indicating that they had received some help or a lot of help from their school (50%; see Table 5). Thus, it would appear that counselors account for most, but not all of the career planning help received by 11th graders. In the 8th grade, the relative contribution of the school, as a whole, is substantially higher.

TABLE 4

STUDENT-PERCEIVED NEEDS FOR HELP

Area of student concern	Grade 8 "yes" responses % M	% F	% Tot.	Grade 11 "yes" responses % M	% F	% Tot.
Improving study skills	74	72	73	68	61	65
Improving reading skills	65	60	63	61	56	58
Improving math skills	71	74	73	63	58	60
Choosing courses	62	66	64	57	58	58
Discussing personal concerns	38	40	39	29	32	30
Discussing health problems	31	26	29	17	13	15
Making career plans	71	75	73	76	80	78
Obtaining money to continue education after high school	57	57	57	56	55	56
Finding after-school or summer work	72	73	73	64	70	67

Note.--Items fall in area IIC of ACD Content Outline. Directions to students were as follows: "The list below covers several things with which students sometimes would like help. If you would like help with any of these things, mark A for YES. Otherwise mark B for NO."

TABLE 5

GENERAL REACTIONS TO SCHOOL GUIDANCE SERVICES

Paraphrased questions and summary of student responses

1. Overall, how much help with career (educational and job) planning has your school (teachers, counselors, principal, librarian, etc.) given you?

	Grade 8 % M	% F	% Tot.	Grade 11 % M	% F	% Tot.
A. None	25	24	24	20	15	17
B. Little	31	30	31	33	32	32
C. Some	33	34	33	36	39	37
D. A lot	12	12	12	11	15	13

2. Do you feel you can see a guidance counselor when you want to or need to?

	Grade 8 % M	% F	% Tot.	Grade 11 % M	% F	% Tot.
A. Hardly ever	17	14	16	13	14	13
B. Usually	35	34	34	41	41	41
C. Almost always	31	31	31	43	44	43
D. We don't have a guidance counselor	17	20	19	4	2	3

Note.--Items fall in area IV of ACD Content Outline

TABLE 6

REACTIONS TO TYPICAL CAREER GUIDANCE ACTIVITIES

Paraphrased questions and summary of student responses

General directions: "Some of the ways schools help students with career planning are listed below. For each, show how you feel about the help provided at your school."

1. Discussion with a counselor about education and job plans for after high school.

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Help not provided/used	56	56	56	38	32	35
B. Of little help	19	17	18	21	21	21
C. Of some help	17	16	17	29	28	28
D. A lot of help	8	11	10	12	18	15

2. Class discussion by teachers of jobs related to their subjects

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Help not provided	38	40	39	37	34	35
B. Of little help	28	27	27	27	23	25
C. Of some help	24	23	24	27	28	27
D. A lot of help	10	10	10	10	15	12

3. Films on jobs, talks by workers (in person or on tape), "career days," tours.

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Help not provided/used	46	51	48	44	43	44
B. Of little help	21	20	20	22	18	20
C. Of some help	23	20	21	24	25	24
D. A lot of help	11	11	11	11	14	12

4. File of job descriptions, pamphlets, or books on jobs.

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Help not provided/used	46	48	47	38	30	34
B. Of little help	25	21	23	24	20	22
C. Of some help	21	22	21	30	37	33
D. A lot of help	9	10	9	9	13	11

Note.--Items fall in area IV of ACD Content Outline.

For many years, teachers have been urged to make their subjects relevant to the "real world." More recently, and particularly in career education programs, attention has shifted to "the world of work." While the emphasis of these efforts is on instructional effectiveness and career awareness rather than career planning, certainly help with the latter is a reasonable concomitant to be expected. Item 2 in Table 6 shows that nearly 40% of the 11th graders and 8th graders do, indeed, say that class discussions of jobs related to the subjects they are studying provide some help or a lot of help with career planning. However, an equal number of students indicate that they had not experienced class discussions of this type, possibly indicating a large number of teachers yet to accept a career-relevance orientation.

Items 3 and 4 in Table 6 summarize student reactions to other types of common career guidance practices. A review of Tables 5 and 6, together, indicates that somewhat less than one-fifth of the 11th graders feel that they have received a lot of help with career planning via the various educational programs and guidance services offered by schools. It is interesting to speculate on whether these students are concentrated in only a few of the 200 schools in the study. If so, the characteristics of the guidance programs in those schools may be worthy of attention. An investigation of this question is included among the further studies currently being considered.

Career Plans

One of the questions in the study asked students to indicate their first occupational preference and then select the "job family" appropriate to it from a list provided. While the main purpose of this question was to provide a reference point for a series of questions on the foundations of this preference, the distribution of student occupational preferences is, itself, of interest. Students were introduced to the job family list via an exercise appearing in the student orientation leaflet. This exercise essentially duplicated the occupational preference item on the ACD and was meant to maximize accuracy in student assignment of occupational preferences to job families.

Accuracy of assignment was studied for a random sample of 400 8th and 11th graders in 40 schools (ACT, 1973). Approximately 85% of both grade groups classified their occupational preferences into the appropriate job family. Where agreement was lacking, students usually had identified a job family closely associated with the appropriate one.

The distribution of student choices across the 25 job families is shown in Table 7. While several discrepancies with employment projections are evident, the most striking feature of the data is the evidence of sex differences. The nature of these differences is not surprising. However, their extent is quite dramatic. For example, over half of the 11th grade girls choose occupations falling in only 3 of the 25 job families, i.e., clerical and secretarial work, education and social services, nursing and human care. Seven percent of the boys prefer occupations

TABLE 7

DISTRIBUTION OF FIRST OCCUPATIONAL PREFERENCE BY JOB FAMILY

Job family category	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
Business Sales & Management Cluster	(7)[a]	(6)	(6)	(8)	(5)	(6)
A. Promotion, direct contact sales	2	2	2	3	2	2
B. Management & planning	3	2	2	4	1	3
C. Retail sales & services	2	2	2	1	2	1
Business Operations Cluster	(7)	(17)	(12)	(9)	(22)	(16)
D. Clerical & secretarial work	0	13	7	0	16	8
E. Paying, receiving & bookkeeping	1	2	1	4	4	4
F. Office machine operation	5	2	3	4	2	3
G. Storage, dispatching & delivery	1	0	1	1	0	1
Technologies & Trades Cluster	(47)	(5)	(27)	(46)	(7)	(26)
H. Human services crafts	0	2	1	0	2	1
I. Repair, service home/ office equipment	4	0	2	4	0	2
J. Growing-caring for plants/ animals	8	2	5	7	2	4
K. Construction & maintenance	9	0	5	10	0	5
L. Transport equipment operation	4	0	2	2	0	1
M. Machine operation, service, repair	11	0	6	11	1	6
N. Engineering, applied tech.	11	1	6	12	2	7
Natural, Social. & Medical Sciences	(15)	(15)	(15)	(16)	(14)	(14)
O. Natural science & mathematics	6	3	5	6	3	4
P. Medicine & medical tech.	8	11	9	8	8	8
Q. Social sciences & legel serv.	1	1	1	2	3	2
Creative & Applied Arts Cluster	(11)	(12)	(11)	(11)	(11)	(11)
R. Creative arts	4	6	5	4	4	4
S. Applied arts (verbal)	1	1	1	2	2	2
T. Applied arts (visual)	5	4	4	4	5	5
U. Popular entertainment	1	1	1	1	0	0
Social, Health, & Personal Services	(14)	(46)	(31)	(13)	(43)	(27)
V. Education & social services	5	19	13	6	20	13
W. Nursing & human care	1	18	10	1	16	8
X. Personal & household services	1	8	4	1	6	3
Y. Law enforcing/protective serv.	7	1	4	5	1	3

Note.--Item falls in area IIB2 of ACD Content Outline. Students were asked to print their "1st job choice" on the answer sheet and then find the corresponding job family from a list of job families. Each job family on the list was illustrated by several examples. A previously distributed orientation leaflet provided students with practice on the same task. (For detailed student directions, see Unit 3, item 2 of ACD Test Booklet.)

[a]Totals for job families in career clusters are shown in parentheses.

in these areas. Nearly half of the boys' choices fall in the technologies and trades cluster of job families in contrast to only seven percent of the girls' choices. In only two of the six clusters are boys and girls represented in approximately equal proportions: the natural, social, and medical sciences cluster and the creative and applied arts cluster. Results for the 8th and 11th graders are essentially the same. Efforts to broaden the career options and choices of both males and females must overcome the pervasive influence of work role stereotypes related to sex.

Table 8 provides evidence of the amount of thought students have given to their occupational preferences and career plans. Slight trends in favor of 11th graders appear across all items except for question 5, which taps the certainty of the students' first occupational preference. Only 13% of the 8th graders answered "not sure at all" to the question, whereas 22% of the 11th graders chose that response--a substantial proportionate increase. Perhaps 11th graders, with the approach of major career decisions, take the task of career choice more seriously and begin to weigh more heavily the reality factors involved.

Whether more 11th graders should be "very sure" of their first occupational preference depends on one's viewpoint toward the career development process. Certainly, there is ample testimony in the professional literature and labor market projections that youth should "stay loose" occupationally and keep doors open as long as possible. However, if vocational choice is the "zeroing-in process" that some believe it to be (Super, 1963), one might expect that students finishing the 11th grade would be "fairly sure" of their occupational preferences--meaning, hopefully, that they have given them a lot of thought. Fifty-five percent of the 11th graders say that they have (item 1).

With respect to job preparation, approximately 40% of the 11th graders are uncertain as to whether their educational plans are in line with the occupations they are considering (item 3), and approximately one-fourth are not sure if they will be able to complete the steps necessary to prepare for and enter these occupations (item 4). Yet, despite these uncertainties, nearly 65% are planning two or more years of college and only 15% intend to terminate their education with high school (see Table 9). Although student plans are not always implemented, most 8th graders and 11th graders seem to agree that education, by whatever route, does not stop with high school. Many apparently value education for reasons other than or in addition to job preparation.

What Students Have Done about Career Planning and Occupational Exploration

Study results, to this point, have focused on student feelings, plans, and reactions. What students have actually done about career planning and occupational exploration provides a different perspective from which to view their career development. As noted in Part II of this report, degree of involvement in career exploration and planning was considered to be a primary indicator of student career development. Results obtained on the seven scales covering this area of concern

TABLE 8

SELF-EVALUATION OF CAREER PLANNING

Paraphrased questions and summary of student responses

1. Have you given much thought as to why your 1st two job choices are right for you?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. A little	16	13	15	13	8	10
B. Some	36	37	36	38	32	35
C. A lot	49	50	49	50	60	55

2. How sure are you of steps to prepare for and enter each of the two jobs?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Do not know where to begin	16	15	15	13	11	12
B. Have some idea	45	51	48	46	48	47
C. Steps pretty clear	26	24	25	29	31	30
D. Steps quite clear	14	10	12	12	10	11

3. Is the amount of education you are planning in line with what is needed for the jobs?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Yes	52	52	52	58	60	59
B. Not sure	39	42	41	34	34	34
C. Probably not	9	6	7	7	6	7

4. Do you feel you will be able to complete the necessary steps for at least one of the jobs?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Yes	72	79	75	74	81	77
B. Not sure	23	19	21	23	17	20
C. Probably not	5	2	4	4	2	3

5. Students often change their minds about job choices. How sure are you that your "First Job Choice" will be the same in a year?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
Very sure	41	39	40	31	33	32
Fairly sure	46	48	47	45	47	46
Not sure at all	13	13	13	24	20	22

Note.--Items fall in areas IIB3 and IIIB4b of ACD Content Outline. Directions for items 1-4 were as follows: "A few minutes ago, you were asked to print the names of your first two job choices on the answer folder. The rest of the questions on this page all refer to these two jobs. THINK ONLY OF THESE TWO JOBS as you answer each of the following items."

TABLE 9

EDUCATIONAL PLANS

Amount/type of education	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
Graduate from high school	16	18	17	14	17	15
Complete an apprenticeship program	2	1	1	5	1	3
Complete job training program in military	7	1	4	5	2	4
Complete up to two years in community college (junior college or technical school)	13	14	13	15	22	18
Complete up to two years in private business, trade, or technical school	7	5	6	7	7	7
Complete three years or more of college	47	52	50	49	44	46
Something else	9	9	9	6	7	6

Note.--Item falls in area IIB1 of ACD Content Outline. Directions to students were as follows: "What is the greatest amount of education you plan to complete during your life?"

are presented below. Each scale is based on an inventory of self-reported activities with amount of participation in these activities used as the indicator of involvement.

Career Planning Involvement

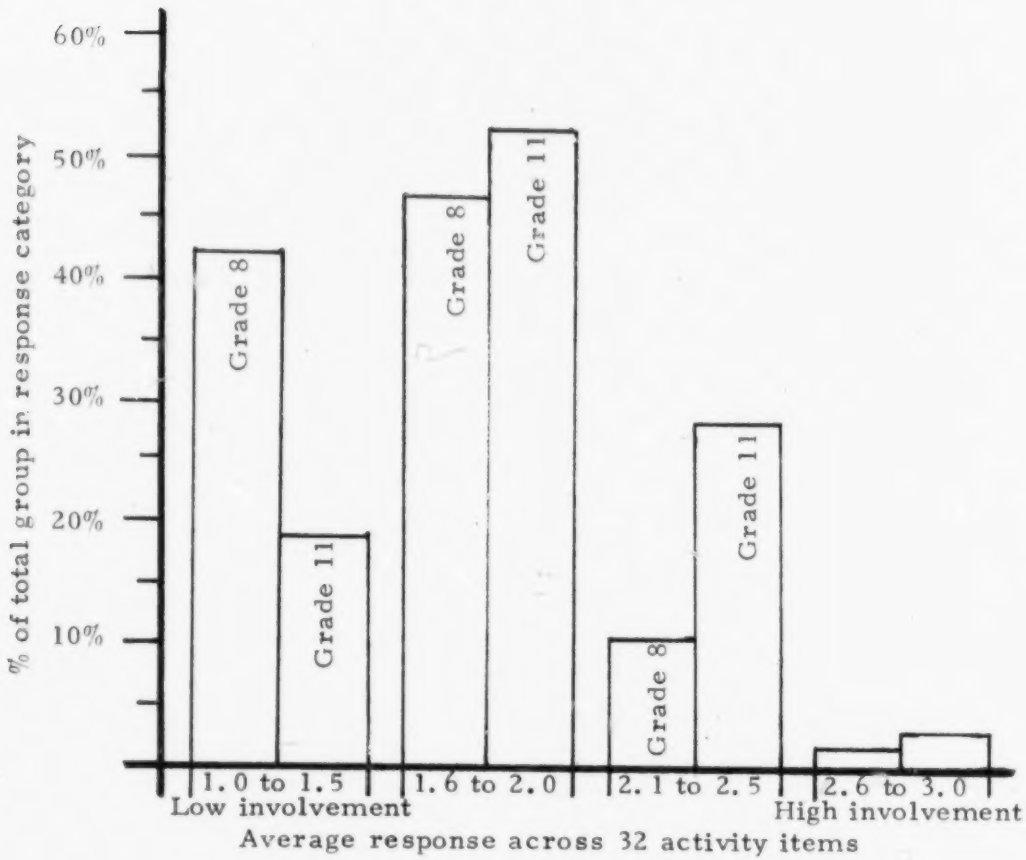
Students were asked to give one of three activity-level responses to the 32 activities on the Career Planning Involvement Scale. These responses were then assigned numerical values (see the footnote to Figure 1) that were averaged across the 32 items. Because the results for males and females were very similar, they are not shown separately. Readers interested in grade-by-sex group data can consult Appendix D of the Handbook for the ACT Assessment of Career Development (ACT, 1973).

What constitutes high involvement and low involvement is largely a value judgment that must take into account the nature of the 32 activities in the Career Planning Involvement Scale. These activities, which are presented in the appendix for the reader's review, were selected for the study because they are frequently cited in the career guidance literature as facilitating career exploration, planning, and development. We believe that schools with active, experientially-based career guidance programs will provide students with repeated opportunities for contact with experiences and activities similar to those used in the scale. For this reason, and in the absence of a panel of expert judges, we suggest that average responses of 2.1 or higher represent a desirable level of career planning involvement.

As can be seen from Figure 1, only about 10% of the 8th graders and 30% of the 11th graders obtained scores in the 2.1 to 3.0 range. At the other extreme, more than 40% of the 8th graders and nearly 20% of the 11th graders scored in the 1.0 to 1.5 range. That is, they answered "No, I haven't done this . . . " to at least two-thirds of the activities. While we are willing to admit that 8th graders still have several years to initiate career planning activities, we believe it is unfortunate that as many as 20% of the nation's 11th graders exhibit what can only be called a very low level of career planning involvement. Another 50% barely approach the minimum desirable level.

Responses to several of the items on the Career Planning Involvement Scale are summarized in Table 10 in order to provide perspective on the meaning of scores. For all items except one, involvement levels are substantially lower for 8th graders than for 11th graders. The exception is item 7--touring a local industry, etc. to observe what various jobs are like. Possibly, business and industry tours are being offered more frequently now than in 1970 when the study's 11th graders were 8th graders. However, it is also possible that both groups experienced about the same level of activity in this area during the late elementary school years; but because they are closer to these experiences, 8th graders recall them better.

Figure 1. Summary of Career Planning Involvement of 8th and 11th Graders



Note.--Scale falls in area IIIB of ACD Content Outline. Points were assigned to student responses as follows:

1.0--No, I haven't done this activity OR the time I spent on this is not worth mentioning.
2.0--Yes, I have done this but only once or twice.
3.0--Yes, I have done this several times.

Hence, an average response in the range of 2.6 to 3.0 would mean that the student answered "Yes, I have done this several times" to at least two-thirds of the 32 activities listed. Likewise, an average response in the range of 1.0 to 1.5 would mean that the student answered "No, I haven't done this . . . " to at least two-thirds of the activities. The 32 activities are listed in the appendix of this report.

TABLE 10

SUMMARY OF RESPONSES TO SELECTED CAREER PLANNING INVOLVEMENT QUESTIONS

Typical activities	Response option	Grade 8 % M	Grade 8 % F	Grade 8 % Tot.	Grade 11 % M	Grade 11 % F	Grade 11 % Tot.
A. Activities related to students' 1st two occupational choices							
1. Discussed the jobs with a parent, relative, or guardian	A	19	14	17	11	6	9
	B	38	36	37	32	23	28
	C	43	50	47	56	71	63
2. Talked with workers in the jobs about how they came to be in the job.	A	49	52	50	43	40	41
	B	36	35	36	36	39	37
	C	15	13	14	21	22	22
3. Talked with a counselor or teacher about how my goals, interests, and abilities relate to the jobs.	A	63	65	64	46	38	42
	B	28	26	27	37	39	38
	C	9	9	9	17	23	20
B. Activities related to career plans in general							
4. Discussed, in class, jobs related to the subject we were studying.	A	33	32	33	25	20	23
	B	48	48	48	47	49	48
	C	19	20	19	28	31	30
5. Took a course in school that studied several different types of jobs.	A	71	80	76	66	70	68
	B	22	16	19	26	23	25
	C	7	4	5	8	7	7
6. Read a job description from the school library or guidance office job files.	A	60	62	61	44	36	40
	B	28	28	28	37	37	37
	C	12	10	11	19	27	23
7 Took a tour through a local industry, business, hospital, or office to observe what the various jobs were like.	A	32	37	34	41	42	41
	B	47	44	46	42	43	42
	C	21	18	20	17	16	16
8. Attended a "job fair" or "career day" where workers or employers talked about jobs.	A	78	82	80	67	63	65
	B	17	14	16	24	26	25
	C	5	3	4	9	10	10
. Took part in an actual or a practice job interview.	A	75	80	78	55	54	55
	B	18	15	17	31	34	32
	C	6	4	5	14	12	13

Note.--Items fall in area IIIB of ACD Content Outline. Directions to students were as follows: " . . . indicate how often you have done each activity listed below. Use the following responses for each activity.

A. No, I haven't done this OR the time I spent on this is not worth mentioning.
B. Yes, I have done this but only once or twice.
C. Yes, I have done this several times."

As shown in Table 10, over 90% of the 11th graders indicate that they have discussed their occupational choices with a parent, relative or guardian (item 1). However, 41% say they have never talked with workers in the jobs (item 2)--a frequently recommended career guidance tactic. About the same number say they have never talked with a counselor or teacher about the relationship between the jobs they are considering and their goals, interests, and abilities (item 3). Nearly two-thirds have never attended a "job fair" or a "career day," mainstays of career guidance for many years (item 8). More than two-thirds never took a course that surveyed the world of work or some portion of it (item 5). Encouraging, by contrast, are the 78% who participated at least once in class discussions of course-related jobs (item 4). However, the breath of evidence indicates that a substantial number of 11th graders have had little involvement in career planning activities at a time when major decisions are becoming imminent.

Exploratory Occupational Experiences

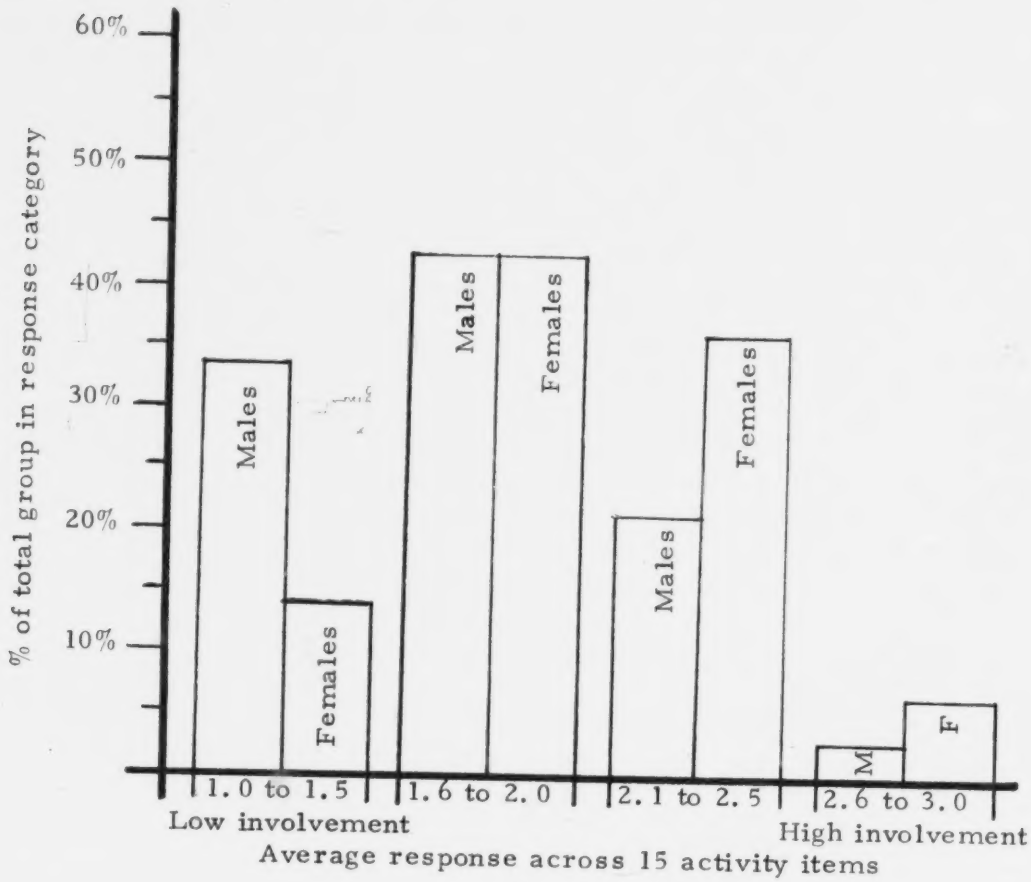
As noted in Part II, six scales assessing student involvement in a variety of job-related activities were included in the study. These scales, which provide scores for each of the occupational clusters listed in Table 7, were intended to tap experiential aspects of career awareness. Fifteen items were scored for each cluster as described in the footnote to Figure 2. Hence, the scoring system was the same as that used with the Career Planning Involvement Scale. Perspective on scale coverage is provided by the list of 90 activities grouped by cluster in the appendix.

Figures 2-7 summarize the scores of 11th grade males and females on the six scales. Results for grade 11, only, are provided because differences across grades were generally small in comparison to sex group differences.

A quick survey of Figures 2-7 reveals that the sex group differences occur primarily in the social, health, and personal services cluster, the business operations cluster, and the technologies and trades cluster. Females, as expected, score higher on the first two clusters. Thus, these sex group differences directly parallel the differences in occupational preferences summarized in Table 7. A reasonable hypothesis is that exploratory occupational experiences influence occupational preferences and that sex role stereotypes have a significant influence on both.

Readers are once again urged to make their own judgments with respect to what constitutes a satisfactory performance on the scales. Our own judgment is that students should have the opportunity for tryout experiences that encompass the entire world of work. We also believe that an active, experientially-based career guidance program will seek to supplement and expand on the career-related experiences students encounter outside of the school. For these reasons, we again view average responses of 2.1 or higher to be desirable. Relatively few students, and consequently few schools, meet this criterion. With only one exception, the technologies and trades cluster, less than one-third of the students in the nation obtain cluster scores in the 2.1-3.0 range.

Figure 2. Summary of Exploratory Occupational Experiences of 11th Grade Males and Females: Social, Health, and Personal Services Cluster

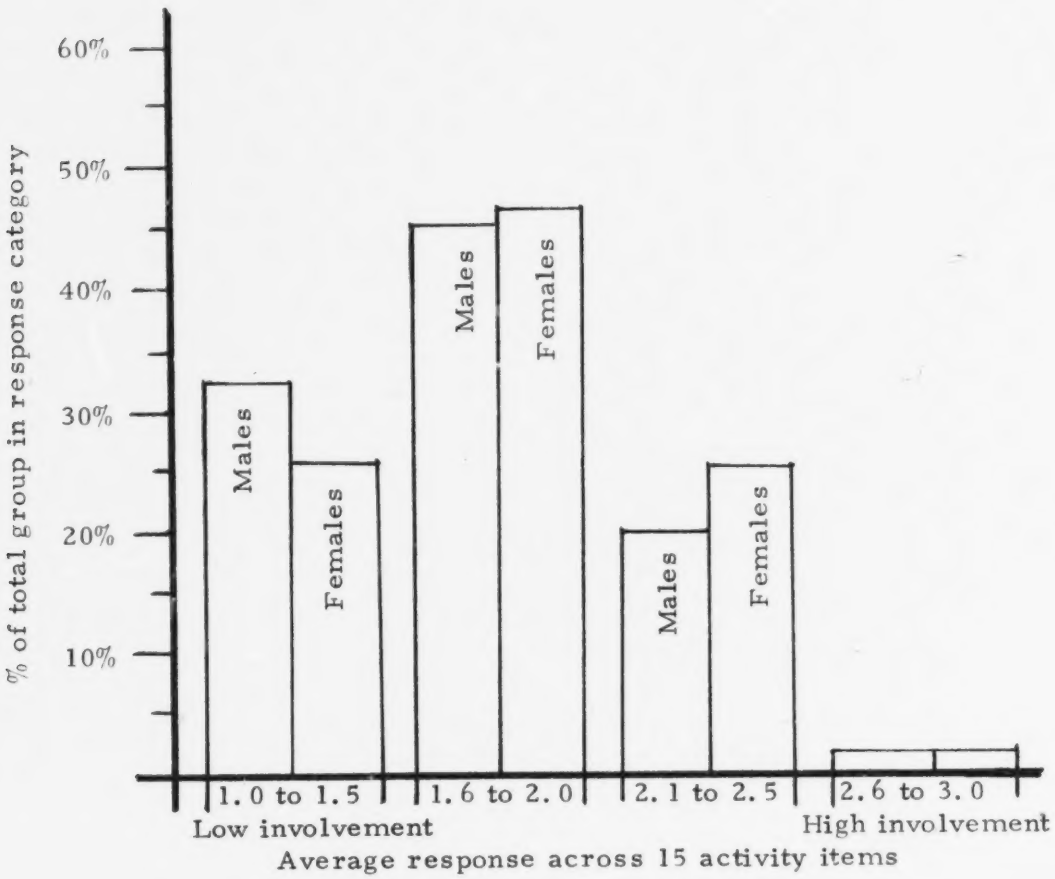


Note.--Scale falls in area IB of ACD Content Outline. Points were assigned to student responses as follows:

1.0--No, I haven't done this activity OR the time I spent on this is not worth mentioning.
2.0--Yes, I have done this but only once or twice.
3.0--Yes, I have done this several times.

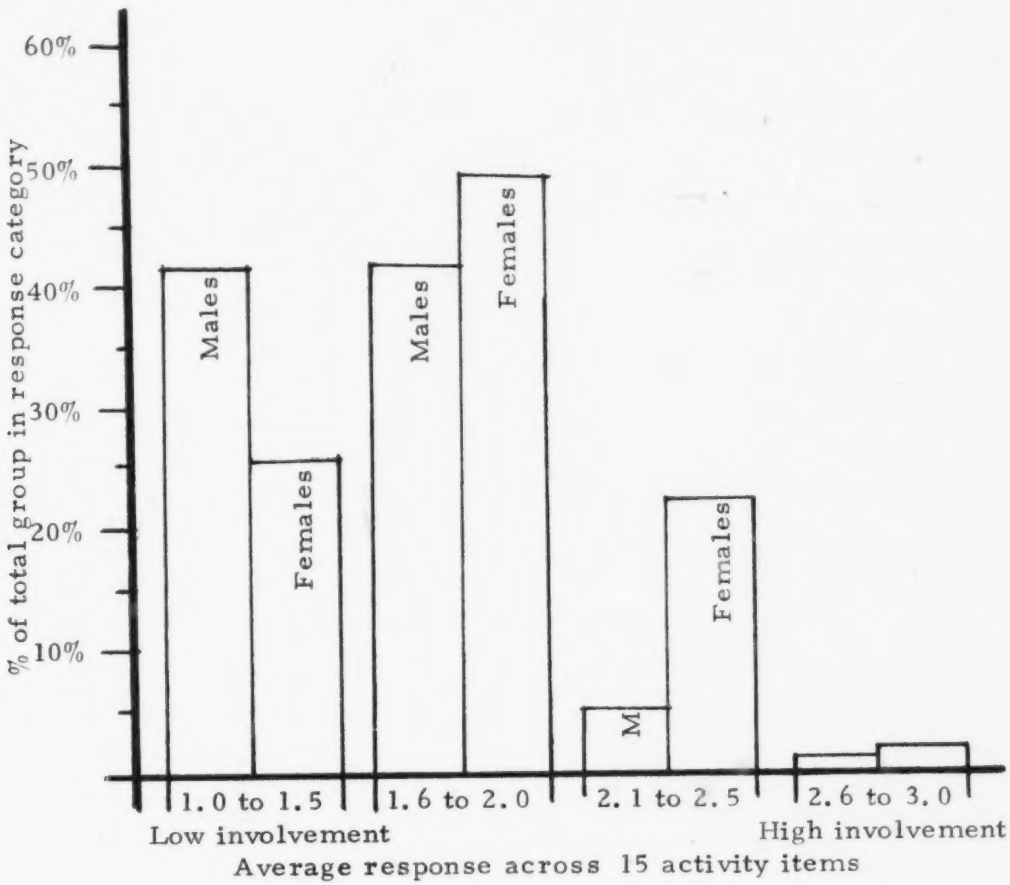
Hence, an average response in the range of 2.6 to 3.0 would mean that the student answered "Yes, I have done this several times" to at least two-thirds of the 15 activities listed. Likewise, an average response in the range of 1.0 to 1.5 would mean that the student answered "No, I haven't done this . . . " to at least two-thirds of the activities. The 15 activities are listed in the appendix of this report.

Figure 3: Summary of Exploratory Occupational Experiences of 11th Grade Males and Females: Business Sales & Management Cluster



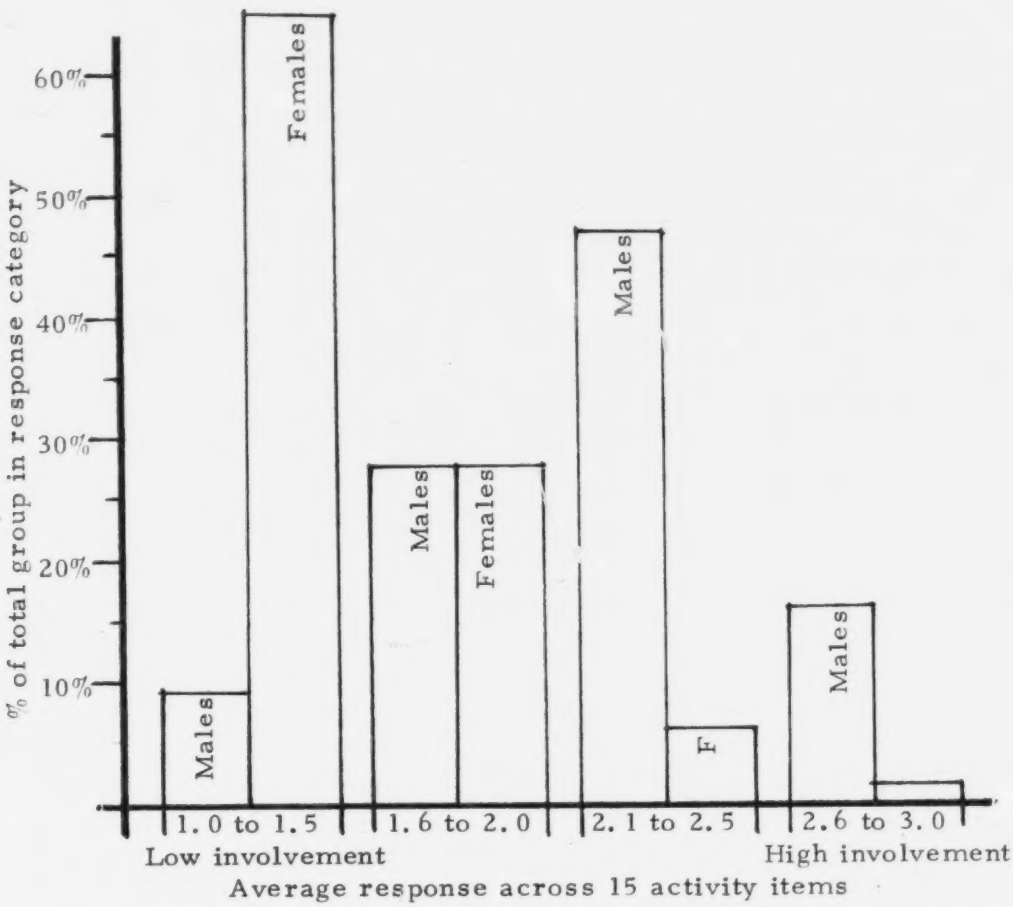
Note. --Scale falls in area IB of ACD Content Outline. The 15 activities are listed in the appendix of this report. See Figure 2 for the scoring system that was used.

Figure 4: Summary of Exploratory Occupational Experiences of 11th Grade Males and Females: Business Operations Cluster



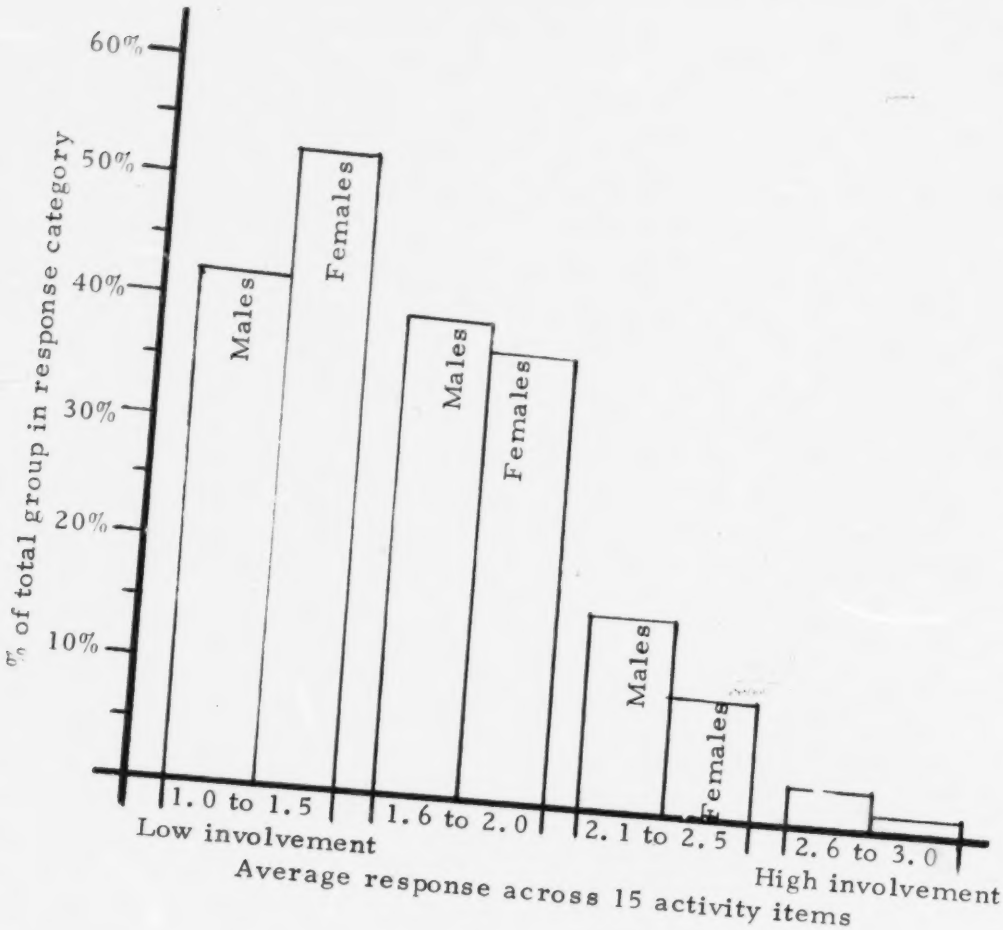
Note. --Scale falls in area IB of ACD Content Outline. The 15 activities are listed in the appendix of this report. See Figure 2 for the scoring system that was used.

Figure 5: Summary of Exploratory Occupational Experiences of 11th Grade Males and Females: Technologies & Trades Cluster



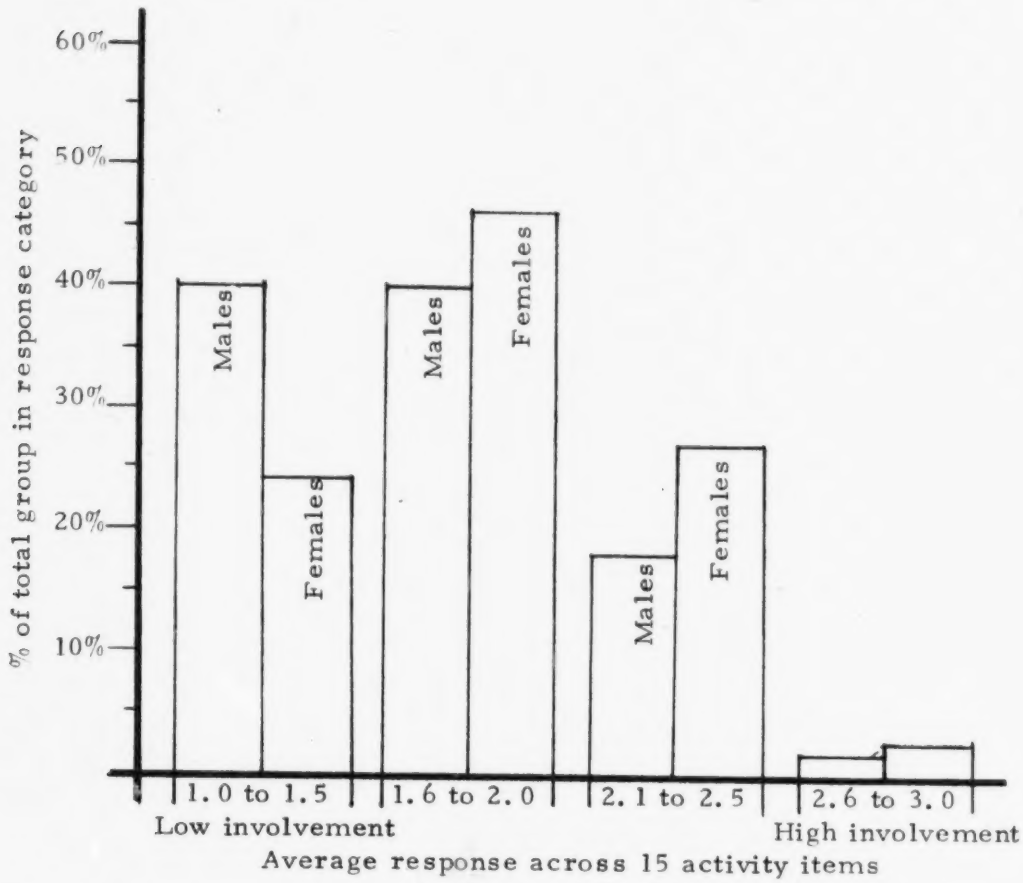
Note. --Scale falls in area IB of ACD Content Outline. The 15 activities are listed in the appendix of this report. See Figure 2 for the scoring system that was used.

Figure 6: Summary of Exploratory Occupational Experiences of 11th Grade Males and Females: Natural, Social, & Medical Sciences Cluster



Note.--Scale falls in area IB of ACD Content Outline. The 15 activities are listed in the appendix of this report. See Figure 2 for the scoring system that was used.

Figure 7: Summary of Exploratory Occupational Experiences of 11th Grade Males and Females: Creative & Applied Arts Cluster



Note.--Scale falls in area IB of ACD Content Outline. The 15 activities are listed in the appendix of this report. See Figure 2 for the scoring system that was used.

Table 11 summarizes student responses to 12 of the activities included in the Exploratory Occupational Experience Scales. Some of these activities have intrinsic interest apart from their relevance to career development. For example, more than one-third of the 11th graders state that they have never read the editorial page of a newspaper. Only 12% never had a regular paying job outside of their home. Other activities reveal the source of the pronounced sex differences observed for three of the clusters. Two-thirds of the females in both grades, but less than one-fifth of the males have never "fixed mechanical things around home." On the other hand, one-half of the males, but less than one-third of the females have "never written a short story or poem" outside of a class assignment.

Generally, differences between 8th graders and 11th graders are not large, and in some cases, 8th graders indicate more experience than 11th graders. As discussed in the section on career planning involvement, this apparently higher activity level for 8th graders may result from the natural tendency to recall recent experiences rather than experiences accumulated over the years.

In summary, the exploratory occupational experiences of most 8th and 11th graders, experiences that can do much to broaden the career horizons and aspirations of all students, appear to be quite limited. When the experiences of males and females are compared, the results suggest distinct patterns related to sex roles endemic to American society.

What Students Know about Career Planning and Occupations

As already noted, correlational studies conducted with the ACD suggest that the knowledge and experience components of career development are relatively independent. Hence, the ACD knowledge scales provide still another perspective from which to view student career development.

Career Planning Knowledge

The questions included on the Career Planning Knowledge Scale are listed in the appendix along with the response options that are keyed correct. We believe that a reading of the literature on career development theory and career guidance practice will indicate that students at the end of the junior year in high school ought to be able to answer almost all of these questions correctly if they have been involved in a developmental career guidance program. However, as shown in Figure 8, only 31% of the 11th graders can answer more than three-fourths of the questions correctly. While the rest do not deserve "D's" and "F's" in career development, we believe that there is ample room and need for improvement. Readers are urged to review the Career Planning Knowledge Scale items before drawing their own conclusions.

Substantial differences in the career planning knowledge of 8th and 11th graders are apparent from Figure 8. These differences are probably due in part

TABLE 11

SUMMARY OF RESPONSES TO SELECTED EXPLORATORY OCCUPATIONAL EXPERIENCES ITEMS

Typical activities	Response option[a]	Grade 8 % M	Grade 8 % F	Grade 8 % Tot.	Grade 11 % M	Grade 11 % F	Grade 11 % Tot.
1. Had a regular paying job outside of my home (for example, paper route, baby-sitting, shoe shining, lawn mowing, car washing).	A	18	21	20	10	13	12
	B	27	24	25	21	22	21
	C	55	55	55	69	66	67
2. Fixed mechanical things around home.	A	19	68	44	17	66	40
	B	41	24	32	38	27	33
	C	40	8	24	45	8	27
3. Took a machine apart to see how it operates.	A	19	69	45	19	71	44
	B	37	23	30	38	23	31
	C	44	8	25	43	7	26
4. Did a science experiment that was not assigned in class.	A	38	52	45	50	68	59
	B	39	37	37	32	26	29
	C	25	11	18	18	6	12
5. Wrote a short story or poem outside of a class assignment.	A	47	23	34	50	29	40
	B	36	42	39	29	33	31
	C	17	36	27	20	38	29
6. Worked actively in a service group or as a volunteer aide.	A	53	46	50	53	35	44
	B	29	32	31	27	30	29
	C	18	22	20	20	35	27
7. Visited an art museum.	A	36	28	32	31	23	27
	B	44	44	44	49	46	47
	C	20	28	24	20	32	26
8. Worked for a "cause" like fire prevention, ecology, or safety.	A	44	48	46	51	54	53
	B	38	36	37	35	35	35
	C	18	15	17	14	11	12
9. Read the editorial page of a Sunday newspaper.	A	45	39	42	38	35	37
	B	38	42	40	38	44	41
	C	17	18	18	24	21	22
10. Organized a club, "gang," school group, or team.	A	32	36	34	43	48	46
	B	38	42	40	38	36	37
	C	30	22	26	19	16	17

Continued on next page.

TABLE 11 (continued)

SUMMARY OF RESPONSES TO SELECTED EXPLORATORY OCCUPATIONAL EXPERIENCES ITEMS

Typical activities	Response option[a]	Grade 8 % M	Grade 8 % F	Grade 8 % Tot.	Grade 11 % M	Grade 11 % F	Grade 11 % Tot.
11. Kept accurate records of my own expenses.	A	55	54	54	48	44	46
	B	30	31	31	32	37	34
	C	15	15	15	21	19	20
12. Figured postage costs for a catalog order.	A	46	52	49	50	56	53
	B	37	34	35	32	29	31
	C	18	14	16	17	15	16

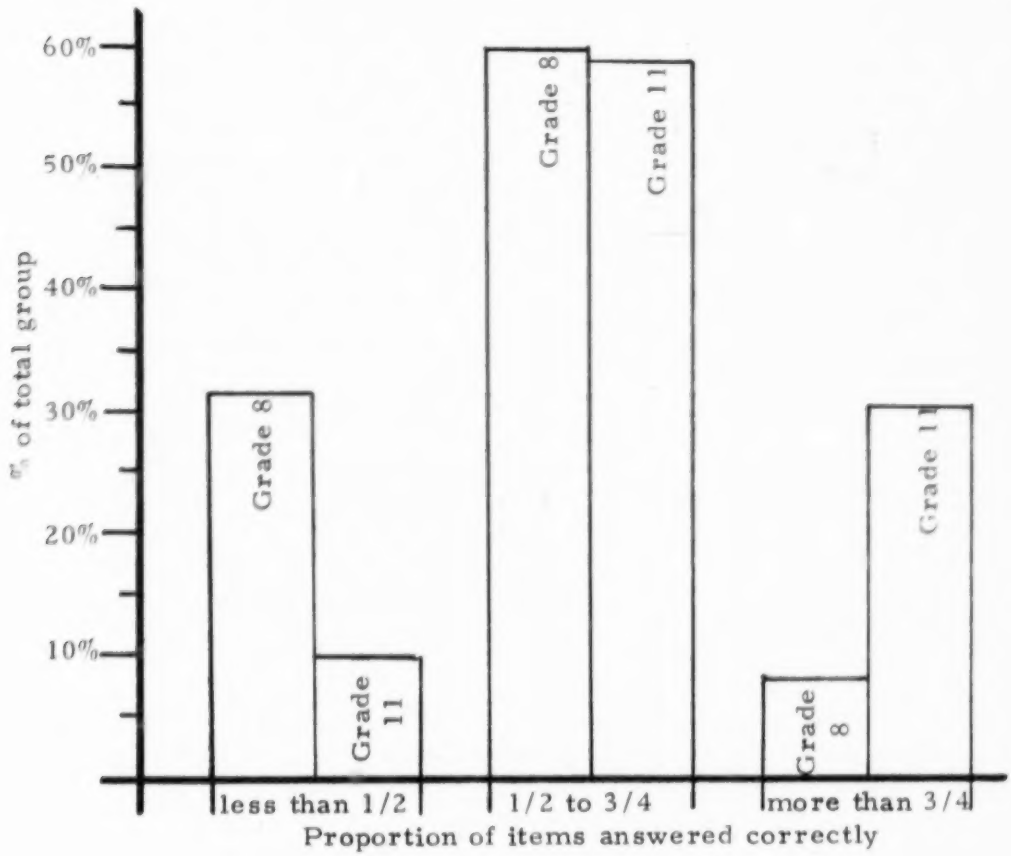
Note.--Items fall in area IB of ACD Content Outline. Directions to students were as follows: indicate " . . . how often you have done each activity listed below. Use the following responses.

A. No, I haven't done this OR the time I spent on this is not worth mentioning.
B. Yes, I have done this but only once or twice.
C. Yes, I have done this several times."

(See Unit 6 of ACD Test Booklet.)

[a] General directions and response options are presented above.

Figure 8: Summary of Career Planning Knowledge of 8th and 11th Graders



Note. --This 40-item scale falls in area IIIA of the ACD Content Outline. Less than 10% of the 8th graders and 5% of the 11th graders scored below 15, the approximate score to be expected of students who guess on all of the items. The 40 items on the Career Planning Knowledge Scale are presented in Appendix A of this report.

to the concentration of career guidance activities in the later high school years. When junior high school career guidance programs are offered, the focus is typically on career awareness and self-career exploration rather than career planning. Finally, growth in mental functioning over the high school years may also play a role in the observed differences. For these various reasons, we are not disappointed by the performance of 8th graders.

An inspection of student responses to specific questions on the Career Planning Knowledge Scale should facilitate an assessment of overall performance. Responses to 18 of the 40 items are summarized in Tables 12 and 13. Several of the items in Table 12 cover misconceptions about career planning--misconceptions that are common among both students and adults. When evaluating the results for these items, the reader is reminded that if all students guessed the answer to an item (or, more correctly, flipped a coin), approximately 50% would get the item right. Substantially fewer than 50% answered items 2, 3, and 6 correctly, thus suggesting that these items are especially good examples of common misconceptions.

We recognize that on any "objective test," and especially in the area of career planning, the correct answers to questions may sometimes be debatable. However, the reader is reminded that items used in the ACD scales were developed from content specifications based on career development theory and guidance practices. In order to further minimize potential differences of opinion about "correct" answers, the items were repeatedly reviewed by outside consultants and members of the project staff. To minimize misinterpretation by students, items were tried out on large numbers of students with the results being subjected to standard statistical procedures for analyzing item and detractor functioning. Hopefully, these efforts to ferret out "bad" items have been successful.

Table 12 contains some encouraging findings as well as some disappointments. For example, 85% of the 11th graders recognize that career planning must begin before the final year of high school (item 1). However, 61% believe that "the earlier one chooses his life's work, the better" (item 2). Career guidance experts generally agree that the initial steps in career planning should begin long before the 12th grade. But most would also maintain that students should strive to keep their career options open as long as possible. The generally accepted goal of career guidance is not to get Johnny or Susie to choose an occupation as soon as possible--or to choose an occupation at all, for that matter. Rather, it is to help students recognize their career options, understand the personal implications (the psychosocial impact) of these options, maximize their opportunities to achieve favored options, and make career decisions wisely when they have to be made. Because most persons do <u>not</u> remain in the same job throughout their adult lives (61% of the 11th graders believe they do), students will have repeated opportunities to use the career planning skills developed in school.

TABLE 12

SUMMARY OF RESPONSES TO SELECTED "TRUE-FALSE" CAREER PLANNING KNOWLEDGE ITEMS

Items	Response option	Grade 8 % M	Grade 8 % F	Grade 8 % Tot.	Grade 11 % M	Grade 11 % F	Grade 11 % Tot.
A. "Common misconception" items							
1. Most people do not need to begin career planning until their final year in high school.	T	22	17	19	17	12	15
	*F	78	83	81	83	88	85
2. The earlier one chooses his life's work the better.	T	67	63	65	62	60	61
	*F	33	37	35	38	40	39
3. Most persons remain in the same job throughout their adult lives.	T	64	68	66	60	63	61
	*F	36	32	34	40	37	39
4. Few women work outside of the home after marriage.	T	45	37	41	36	23	30
	*F	55	63	59	64	77	70
5. Less than one-third of all job openings require a college degree.	*T	50	49	49	50	44	47
	F	50	51	51	50	56	53
6. Most people have the ability to do well in any job if they set their minds to it.	T	75	77	76	70	70	70
	*F	25	23	24	30	30	30
7. There is only one "right job" for a person in terms of his abilities.	T	32	27	29	18	15	17
	*F	68	73	71	82	85	83
B. Additional true-false items							
8. The unemployment rate of 20 year olds in the labor market is usually less than the rate for other adults.	T	48	47	48	44	42	43
	*F	52	53	52	56	58	57
9. The State Employment Service Office provides free information about job openings and job training programs.	*T	88	92	90	94	96	95
	F	12	8	10	6	4	5
10. Apprentices are paid while they learn.	*T	62	57	59	84	78	82
	F	38	43	41	16	22	18
11. The English and math skills of freshmen are about the same from one college to another.	T	47	48	48	48	56	52
	*F	53	52	52	52	44	48

Note.--These true (T), false (F) items fall in area IIIA of the ACD Content Outline. All 40 items on the Career Planning Knowledge Scale are presented in the appendix of this report. An asterisk (*) indicates the response that is keyed correct.

TABLE 13

SUMMARY OF RESPONSES TO SELECTED MULTIPLE-CHOICE CAREER PLANNING KNOWLEDGE ITEMS

Items and summary of student responses

1. Which one of the following is the best way to begin career planning?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Look at what is available on the job market.	13	7	10	8	5	7
B. Take tests to find out what you should do.	25	18	21	18	13	16
*C. Consider what it is you want out of a job.	49	62	55	61	68	64
D. Read as many job descriptions as you can find.	14	14	14	13	14	14

2. Choosing a job is similar to choosing a marriage partner in that--

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. there is little you can do to prepare for either choice.	7	3	5	3	1	2
*B. how a person feels about the choice is important in both cases.	58	66	62	73	82	77
C. there is only one right person and one right job for each of us.	26	20	23	18	12	15
D. both choices are final.	9	10	10	6	5	6

3. Ideally, which of the following should be most important in your career decisions?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. What the job market is like.	8	4	6	4	2	3
B. The decisions you have made before.	17	8	12	7	2	5
C. What your parents did.	11	5	8	4	2	3
*D. What you want out of life.	64	83	74	84	94	89

4. Which of the following is probably the best way for a person to find out whether he would like the work of a carpenter?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Ask a counselor.	8	5	7	4	2	3
B. Talk to a building contractor.	18	10	14	11	6	8
*C. Take a shop course in woodworking or carpentry.	66	75	71	81	88	84
D. Read articles about the building industry.	8	9	9	5	4	4

Continued on next page.

TABLE 13 (continued)

SUMMARY OF RESPONSES TO SELECTED MULTIPLE-CHOICE CAREER PLANNING KNOWLEDGE ITEMS

5. What will the labor force probably be like ten years from now?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Most jobs will require four or more years of college.	31	30	31	30	29	30
*B. There will be fewer jobs for unskilled workers.	39	40	40	54	54	54
C. There will be more jobs for high school dropouts than there are now.	20	22	21	10	12	11
D. There will be fewer jobs for technical workers.	10	7	8	6	4	5

6. The Occupational Outlook Handbook gives information about all of the following except--

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. job entry requirements	14	12	13	9	7	8
B. average salaries in occupational fields	27	25	26	19	16	18
C. job openings in major cities	43	51	47	61	68	64
D. descriptions of job duties.	16	13	15	11	8	10

7. Will I be able to find the job I have prepared for? (Find the choice below that is most important to consider in answering this question.)

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. Goals and values	20	20	20	14	16	15
B. Abilities	23	24	24	20	19	20
C. Interests	23	21	22	16	14	15
*D. The job market	34	35	34	50	51	50

Note.--Items fall in area IIIA of the ACD Content Outline. All 40 items on the Career Planning Knowledge Scale are presented in the appendix of this report. An asterisk (*) indicates the response that is keyed correct.

We leave a thorough inspection of Tables 12 and 13 to the reader. Only a few of the results we found particularly interesting will be cited here, i.e. --

Table 12, item 4: 41% of the 8th graders believe that few women work outside of the home after marriage.

Table 12, item 5: 53% of the 11th graders believe that more than one-third of all job openings require a college degree.

Table 12, item 11: 48% of the 11th graders think that the English and math skills of freshmen are about the same from one college to another. (This item and the two above dramatically illustrate the number of students who are misinformed about reality factors in the world of work and education. Unfortunately, career decisions are influenced by just such misinformation.)

Table 13, item 1: Only 21% of the 8th graders see taking tests as the best way to begin career planning. (Hurrah, --much lower than we expected. The test 'em, tell 'em mode of career guidance may finally be on the way out.)

Table 13, items 1, 2, 3: A substantial number of both 8th and 11th graders recognize that goals, values, and feelings play an important role in career decisions. (Among guidance professionals, career decision making is no longer seen as the rational, square-peg, square-hole procedure it was once believed to be. Perhaps students knew this all along.)

Occupational Knowledge

The two occupational knowledge scales used in this study (Occupational Characteristics and Occupational Preparation Requirements) can be thought of as cognitive parallels to the exploratory occupational experience scales previously discussed. Both occupational knowledge and experiences are generally recognized to be key components of career awareness, a commonly accepted indicator of career development.

The complexity of the work world makes the assessment of occupational knowledge a difficult job at best. The Department of Labor, for example, has recognized more than 20,000 different occupational titles (U.S. Department of Labor, 1965). Since complete coverage of the world of work was impossible, limitations on scale coverage were established to make the task of assessing occupational knowledge more manageable. Two basic decisions were made. First, as reflected in the ACD Content Outline, the occupational knowledge scales concentrate on occupational characteristics and preparation requirements

rather than the entire domain of world of work knowledge. Second, the items sample occupational knowledge and are meant to be typical of the type of items students completing a comprehensive career awareness program should know. Because individual items were not required to have the content validity or intrinsic interest sought in items on the other scales, this second decision makes it especially difficult to determine criteria of satisfactory performance.

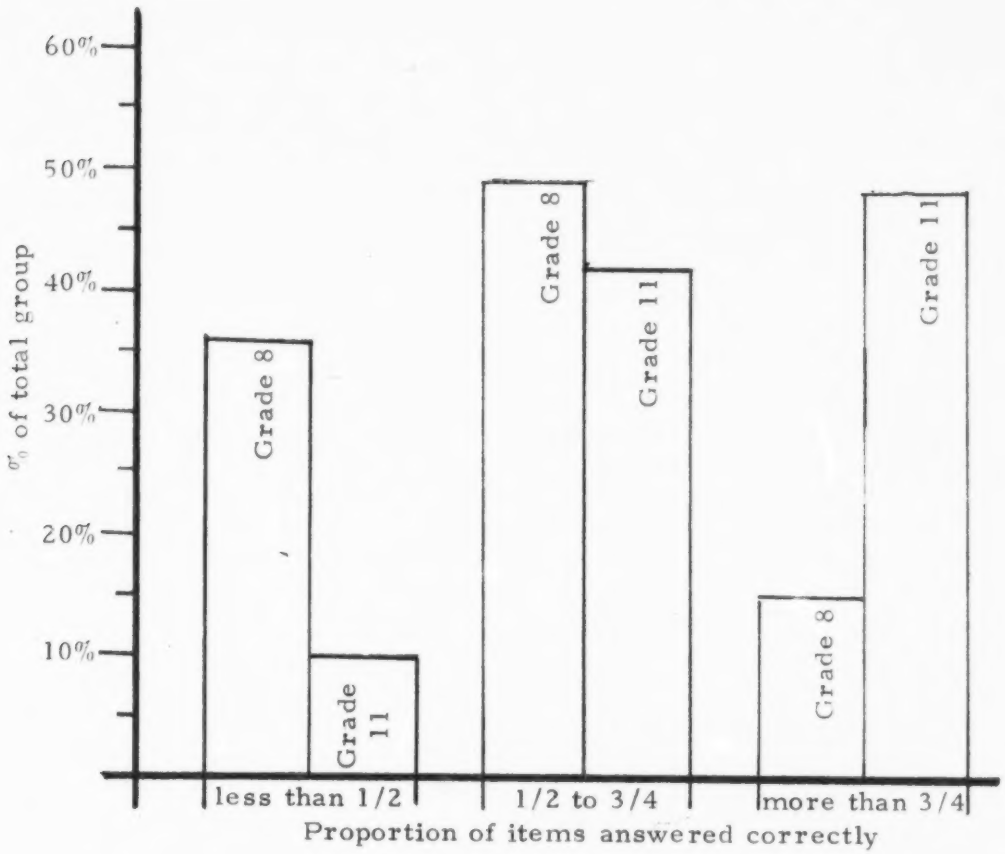
As shown in the table following the list of occupational knowledge items in the appendix, coverage of occupations according to educational level and type of occupational knowledge was sought across and within each of the six occupational clusters. Considerable attention was also given to the difficulty level of the items. While tryout data available for a variety of groups indicated that the scales would be rather difficult for typical 8th graders, we expected 8th graders who had participated in well-developed career awareness programs to score near the ceiling of the scales. Certainly 11th graders, whether or not they had been in such programs, were expected to do well. We concurred in the emphasis being placed on career awareness as a component of career development and believed that 11th graders adequately prepared for the decisions that lay ahead should do well on the scales. Actual student performance on the two occupational knowledge scales is summarized in Figures 9 and 10. Because sex differences were not pronounced, results are presented for grade groups only.

As noted above, there are no concrete criteria by which to judge satisfactory performance on the knowledge scales. In the absence of a panel of experts on career development, however, we feel compelled to present our evaluation. Readers can reach their own conclusions by examining Figures 9 and 10, the summary of student responses to 8 selected items in Table 14, and the 72 items, themselves, in the appendix.

Figure 9 shows that less than 50% of the 11th graders answer more than three-fourths of the occupational characteristics items correctly. With appropriate career guidance experiences, we believe at least 90% should. Student performance on the Occupational Preparation Requirements Scale (Figure 10) is even more disappointing. While we do not suggest that over half of the students in the nation are doomed to misinformed and unsatisfying career choices, we do believe that schools can make a more significant contribution to student career awareness. As a result, students will have better and more comprehensive information about their career options.

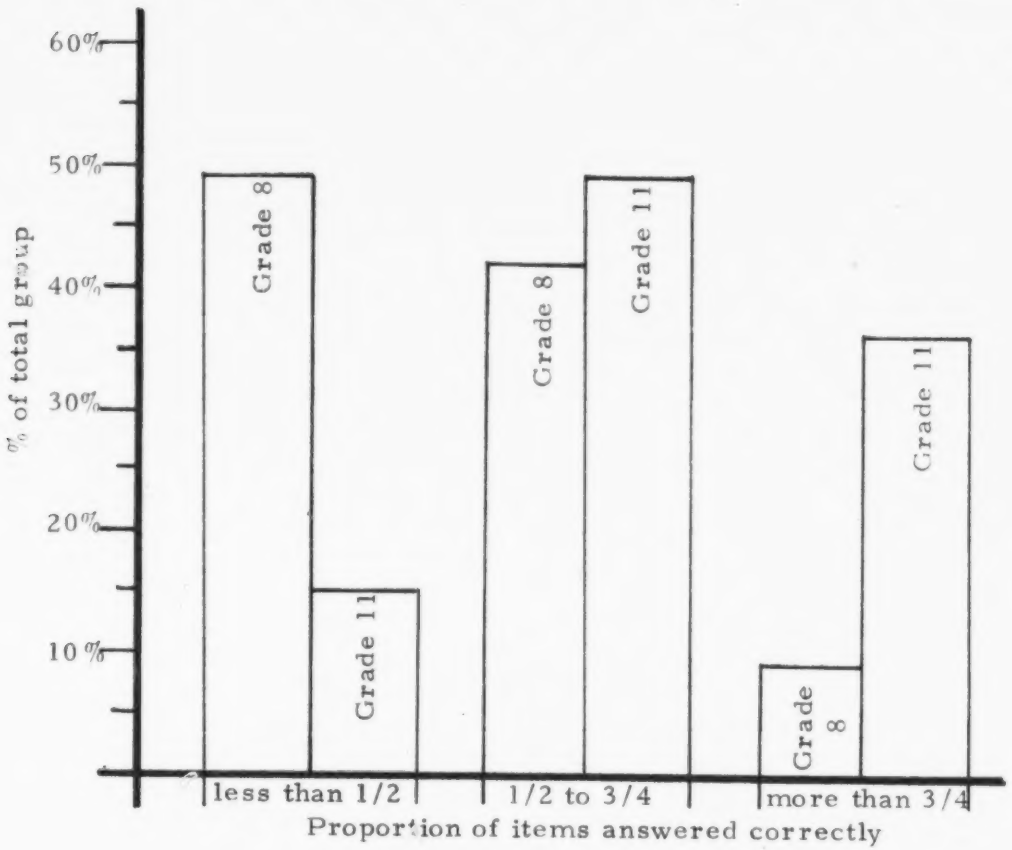
Some insight into student performance on the occupational knowledge scales is provided by the summary of responses to selected items in Table 14. The reader is reminded that these items only sample knowledge about the complex and highly diverse world of work. Thus, it may not be essential that students know a tool and die maker's job is most like that of a machinist (item 3). However, the large percentage answering this item incorrectly says something about student knowledge of career opportunities in the skilled trades.

Figure 9: Summary of 8th and 11th Graders' Knowledge of Occupational Characteristics



Note. --This 54-item scale falls in area IA1 of the ACD Content Outline. Less than 5% of the 8th graders and 1% of the 11th graders scored below 13, the approximate score to be expected of students who guess on all of the items. The 54 items on the Occupational Characteristics Scale are presented in Appendix A of this report.

Figure 10: Summary of 8th and 11th Graders' Knowledge of Occupational Preparation Requirements



Note. --This 18-item scale falls in area IA2 of the ACD Content Outline. Less than 10% of the 8th graders and 5% of the 11th graders scored below 4, the approximate score to be expected of students who guess on all of the items. The 18 items on the Occupational Preparation Requirements Scale are presented in Appendix A of this report.

TABLE 14

SUMMARY OF RESPONSES TO SELECTED
OCCUPATIONAL KNOWLEDGE ITEMS

Items and summary of student responses

1. In which of the following jobs would a person who values job security (not being put out of work) be most satisfied?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
*A. postal clerk	27	34	31	50	54	52
B. carpenter	32	26	29	26	26	26
C. disk jockey	22	21	22	13	12	12
D. politician	20	18	19	10	9	10

2. In which of the following jobs would a person who values independence (deciding for yourself how to do your job) be most satisfied?

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. computer operator	12	9	10	6	4	5
B. bookkeeper	12	10	11	5	5	5
*C. farmer	69	73	71	87	87	87
D. telephone operator	8	8	8	2	3	3

3. A tool and die maker's job is most like that of--

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. a welder	34	45	40	19	37	28
*B. a machinist	35	25	30	60	35	48
C. an electrician	13	12	13	7	9	8
D. a boilermaker	18	17	18	14	19	16

4. Biology and chemistry courses would probably be most helpful to a student thinking about becoming a--

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. meatcutter	8	6	7	4	2	3
B. tailor	6	4	5	2	1	2
C. jeweler	16	12	14	5	3	4
*D. dietician	70	78	74	89	95	92

Continued on next page.

TABLE 14 (continued)

SUMMARY OF RESPONSES TO SELECTED
OCCUPATIONAL KNOWLEDGE ITEMS

5. Buildings are usually planned and designed by--

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. a pattern maker	5	3	4	2	1	2
*B. an architect	72	76	74	88	90	89
C. a building contractor	15	17	16	6	6	6
D. an engineer	8	4	6	4	3	3

6. Six years of college and professional training are usually needed to get a job as--

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. an elevator repairman	6	4	5	2	1	2
B. a cashier	8	4	6	2	1	2
C. a draftsman	21	10	15	13	10	11
*D. an optometrist	65	82	74	82	89	86

7. Choose the minimum type of training the following job usually requires: Waitress

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
*A. on-the-job training	54	61	58	79	87	83
B. four years of high school plus one-the-job training	20	16	18	10	7	9
C. apprenticeship	14	11	12	6	3	4
D. vocational school training	12	12	12	5	3	4

8. Choose the minimum type of training the following job usually requires: Computer Programmer

	Grade 8			Grade 11		
	% M	% F	% Tot.	% M	% F	% Tot.
A. on-the-job training	13	12	13	10	10	10
*B. two years of community or technical college	34	36	35	51	55	53
C. four years of college	44	38	41	30	25	28
D. apprenticeship	9	13	11	8	10	9

Note.--Items fall in area IA of ACD Content Outline. Items 1-5 are taken from the Occupational Characteristics Scale, items 6-8 from the Occupational Preparation Requirements Scale. All 72 items on the occupational knowledge scales are listed in the appendix of this report. An asterisk (*) indicates the response that is keyed correct.

IV. CONCLUDING REMARKS

What, then, can be said about the career development of the nation's youth? Because of the role that values play in judging the satisfactoriness of any human endeavor, each reader will have a unique answer to this question. Our own value judgments have been scattered throughout this report. Indeed, they are inherent in the assessment instruments used in the study. We believe that these instruments capture many of the concerns in the professional literature on career development and many of the objectives of career guidance and career education programs now being implemented in the schools. In the paragraphs that follow, we reiterate our evaluation of what students say, do, and know about career development as shown by these instruments.

First and foremost, we find student-expressed need for help with career planning in sharp contrast to the amount of help students feel they have received. This discrepancy is reflected in what students have (and more often, haven't) done to prepare for the difficult career decisions they face. Lack of knowledge about the world of work and the career planning process also testifies to their need for help. Considered together, we believe these three vantage points for viewing student career development provide a consistent and dismal picture. If we were speaking of physical development rather than career development, we would describe American youth as hungry, undernourished, and physically retarded.

Does this mean that 11th graders will be unable to cope with the career development tasks posed by society at the difficult high school to post-high school transition point? Certainly, youth in the past have been able to "muddle through," just as Mankind has been able to survive physically. However, we believe study results presage unfortunate amounts of floundering and prolonged states of indecision that are costly both to the individual psyche and to the corporate body. Perhaps society can continue to absorb these costs while avoiding the costs inherent in remedy. This is the course of least resistance and its acceptance may involve the least controversy, especially since the remedies currently receiving attention are largely untested. However, thoroughly researched and proven effectiveness is seldom a prerequisite for programs designed to meet demonstrated human need. If it were, most of what is provided in the name of education (both lower and higher) would be recalled for further research and development. While efforts to facilitate student career development should not proceed willy-nilly, it would appear from the results of this study, that current attempts to implement new approaches to career guidance and career education are amply justified.

We firmly believe that the traditional, one-to-one counseling model for "helping Johnny choose his life's work" is no longer viable. This model must be reoriented to encompass what is known about how careers develop and broadened to include the resources of the classroom and community. As educators come to recognize work as one of the central experiences of Man and Woman, as the the making of a life as well as a living, we are hopeful they will accept the challenge posed by the career development needs of American youth.

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APPENDIX

ALLOCATION OF ACD ITEMS ACCORDING TO CAREER DEVELOPMENT CONTENT, TEST UNIT, AND SCALE

ITEMS ON WHICH ACD SCALES ARE BASED

ACD Content Area:
I. Occupational Awareness
A. Occupational Knowledge
ACD Unit: 1
Scales: Occupational Characteristics
Occupational Preparation Requirements
Items: Social, Health, & Personal Services Cluster

ACD item #

4. Who spends the most time working with groups of people?
A. a bookkeeper
*B. a playground director
C. a proof reader
D. a translator

[a]12. Which of the following jobs usually requires the least amount of training?
A. physical therapist
B. electrical engineer
C. licensed practical nurse
*D. hospital attendant

16. Which one of these jobs most often requires working irregular hours?
A. file clerk
*B. nurse
C. key punch operator
D. systems analyst

25. Who spends the most time helping people with personal or family problems?
A. banker
B. policeman
*C. clergyman
D. teacher

26. Having a friendly personality is especially important for success in which of the following jobs?
A. psychologist
*B. airline stewardess
C. payroll clerk
D. bus driver

34. Helping physically disabled people return to work is the job of—
A. a medical technologist
*B. a rehabilitation counselor
C. a clinical psychologist
D. a physiologist

39. Placing children in foster homes and arranging adoptions are most often done by a—
A. probation officer
B. child psychologist
*C. social worker
D. lawyer

50. A softball coach works mainly with—
A. THINGS or MACHINES
*B. PEOPLE
C. IDEAS or THEORIES
D. DATA or RECORDS

54. A child care aide works mainly with—
A. THINGS or MACHINES
*B. PEOPLE
C. IDEAS or THEORIES
D. DATA or RECORDS

[a]59. (See directions, p. 9 of test booklet)
WAITRESS—
*A. on-the-job training
B. four years of high school plus on-the-job training
C. apprenticeship
D. vocational school training

[a]64. Louise would like to be a hairdresser. Doing well in which one of the following high school courses would provide the best evidence that she would be successful in that job?
A. physics
B. French
C. stenography
*D. art

70. Ellen has always been interested in helping others. She is friendly, out-going, and a good listener. After graduating from college with above average grades, Ellen served 2 years in the Peace Corps. She then took one of the following jobs. Which one seems most likely?
A. college professor
B. dental assistant
*C. social caseworker
D. airline stewardess

[a]These items, together with items in the other clusters, are scored on the Occupational Preparation Requirements Scale. Items not footnoted are scored on the Occupational Characteristics Scale.

OVERVIEW OF ACD UNIT 1 ITEMS CONCERNING OCCUPATIONS IN THE SOCIAL, HEALTH, & PERSONAL SERVICES CLUSTER

Knowledge area (See ACD Outline)	Typical amount of formal (in school) preparation required[a]		
	High school	*High school + 1 to 36 months of specialized training*	*3 or more years of college, technical training, etc.*
IA1. Knowledge of occupational characteristics			
a. Duties	1. Porter *54. Child care aide 58. Elevator operator	1. Airline stewardess 25. Policeman *50. Softball coach	*25. Clergyman 25. Teacher *34. Rehabilitation counselor *39. Social worker 39. Child psychologist 39. Probation officer
b. Psychosocial aspects	13. Bartender 24. Hospital orderly	* 4. Playground director 7. Policeman *16. Nurse	6. Junior high teacher 10. Elementary teacher
c. Worker attributes	66. Hotel maid	*26. Airline stewardess 70. Dental assistant 70. Airline stewardess	8. Librarian *70. Social caseworker
IA2. Knowledge of occupational preparation requirements			
	*12. Hospital attendant 19. Child care aide *59. Waitress	12. Licensed practical nurse 15. Policeman 15. Fireman *64. Hairdresser	12. Physical therapist 36. Music teacher

Note.—An asterisk indicates the occupations that are scored. Items appear on the previous page.

[a]Apprenticeable trades are in the middle category. On-the-job training is not considered since varying amounts are usually involved in every job.

ITEMS ON WHICH ACD SCALES ARE BASED

ACD Content Area:
I Occupational Awareness
A Occupational Knowledge
ACD Unit: 1
Scales: Occupational Characteristics
Occupational Preparation Requirements
Items: Business Sales & Management Cluster

ACD item #

1. Who would most likely assist people in making arrangements for an out-of-town trip?
   A. airline stewardess
   B. porter
   C. urban planner
   *D. travel agent

9. Who spends the most time standing while working?
   A. a securities salesman
   B. an optician
   C. a flight engineer
   *D. an appliance salesman

10. Which one of the following jobs would most likely require working during evenings or Saturdays?
   *A. department store clerk
   B. telephone installer
   C. elementary school teacher
   D. roofer

11. Having a friendly personality is especially important for success in which one of the following jobs?
   A. ticket agent
   B. sculptor
   C. personnel assistant
   *D. auto salesman

18. Workers in which of the following jobs are likely to have interests most similar to those of accountants?
   *A. bankers
   B. lawyers
   C. chemists
   D. engineers

20. In which of the following jobs would a person who prefers work involving many different kinds of tasks be most satisfied?
   A. assembly line worker
   *B. hardware store manager
   C. office clerk
   D. typist

27. Who spends the least time working outdoors?
   *A. an encyclopedia salesman
   B. a rancher
   C. a mail carrier
   D. a cement finisher

[a]35. A high school diploma is usually all that is needed to get a job as—
   *A. a clothing salesman
   B. an x-ray technician
   C. a mining engineer
   D. a home economist

44. AN INSURANCE AGENT
   A. hires employees for insurance companies
   B. sets the rates charged by insurance companies
   *C. sells insurance policies
   D. decides which applications for insurance should be accepted

52. A public relations worker works mainly with—
   A. THINGS or MACHINES
   *B PEOPLE
   C. IDEAS or THEORIES
   D. DATA or RECORDS

56. A fashion model works mainly with—
   A. THINGS or MACHINES
   *B. PEOPLE
   C. IDEAS or THEORIES
   D. DATA or RECORDS

58. Which of the following jobs involves working mainly with both PEOPLE and DATA or RECORDS?
   A. elevator operator
   B. punch press operator
   *C. wholesaler
   D. actor (actress)

72. Sally got married right after high school. Her two children are now in school and the family is not well off financially. Sally is a bright, alert person who gets along well with people. She would like a job where she can talk to people and influence them. Which one of the following jobs seems to be the best possibility for Sally?
   A. dental lab technician
   *B. real estate agent
   C. market analyst
   D. sociologist

[a]These items, together with items in the other clusters, are scored on the Occupational Preparation Requirements Scale. Items not footnoted are scored on the Occupational Characteristics Scale.

OVERVIEW OF ACD UNIT 1 ITEMS CONCERNING OCCUPATIONS IN THE BUSINESS SALES & MANAGEMENT CLUSTER

Knowledge area (See ACD Outline)	Typical amount of formal (in school) preparation required [a]		
	High school	*High school + 1 to 36 months of specialized training*	*3 or more years of college, technical training, etc.*
IA1. Knowledge of occupational characteristics			
a. Duties	*1. Travel agent *58. Wholesaler	2. Sales manager 40. Purchasing agent *44. Insurance agent *56. Fashion model	40. Securities salesman *52. Public relations worker
b. Psychosocial aspects	*9. Appliance salesman *10. Dept. store clerk *20. Hardware store manager *27. Encyclopedia salesman	22. Politician 23. Credit manager	9. Securities salesman 16. Systems analyst
c. Worker attributes	*11. Automobile salesman 67. Retail salesperson 69. Sales clerk 69. Shoe dept. manager	8. Hotel manager *72. Real estate agent	*18. Banker 72. Market analyst
IA2. Knowledge of occupational preparation requirements			
	*35. Clothing salesman	43. Purchasing agent	

Note.—An asterisk indicates the occupations that are scored. Items appear on the previous page.

[a]Apprenticeable trades are in the middle category. On-the-job training is not considered since varying amounts are usually involved in every job.

ITEMS ON WHICH ACD SCALES ARE BASED

ACD Content Area:
I Occupational Awareness
A Occupational Knowledge
ACD Unit: 1
Scales: Occupational Characteristics
Occupational Preparation Requirements
Items: Business Operations Cluster

ACD item #

2. Who packages and keeps track of goods ordered by customers?
   A. a sales manager
   B. a mail room supervisor
   C. a dispatcher
   *D. a shipping clerk

3. Who posts credits and debits in a ledger?
   A. a postal clerk
   B. a stenographer
   *C. a bookkeeper
   D. an actuary

5. In which job is knowledge of English grammar most often used?
   A. sign painter
   B. millwright
   *C. secretary
   D. dressmaker

13. Which of the following works under almost constant stress?
   A. industrial engineer
   B. bulldozer operator
   *C. air traffic controller
   D. bartender

[a]15. Which of the following jobs usually requires the least amount of on-the-job training?
   *A. route-delivery man
   B. policeman
   C. air traffic controller
   D. fireman

21. In which of the following jobs would a person who values job security (not being put out of work) be most satisfied?
   *A. postal clerk
   B. carpenter
   C. disc jockey
   D. politician

40. An insurance company's decision of how much money it is willing to pay for damage to property it has insured is based on the report of—
   *A. a claims adjuster
   B. a purchasing agent
   C. an auto-body repairman
   D. a securities salesman

47. A CERTIFIED PUBLIC ACCOUNTANT
   A. certifies applicants for public housing
   *B. compiles and checks business records
   C. decides how products should be advertised
   D. does public relations work

55. A grocery checkout clerk works mainly with—
   A. THINGS or MACHINES
   B. PEOPLE
   C. IDEAS or THEORIES
   *D. DATA or RECORDS

[a]60. (See directions, p. 9 of test booklet)
FILE CLERK—
   A. on-the-job training
   *B. four years of high school plus on-the-job training
   C. two years of community or technical college
   D. four years of college

[a]63. TELEPHONE OPERATOR—
   A. on-the-job training
   *B. four years of high school plus on-the-job training
   C. two years of community or technical college
   D. four years of college

66. Mary took several business courses while in high school. English was her poorest subject. Her favorite outside activity was the Dramatic Club. She is a well-groomed, poised, and alert girl who likes to be around people. She now holds one of the following jobs. Which one seems most likely?
   A. secretary
   *B. receptionist
   C. stenographer
   D. hotel maid

[a]These items, together with items in the other clusters, are scored on the Occupational Preparation Requirements Scale. Items not footnoted are scored on the Occupational Characteristics Scale.

OVERVIEW OF ACD UNIT 1 ITEMS CONCERNING OCCUPATIONS IN THE BUSINESS OPERATIONS CLUSTER

Knowledge area (See ACD Outline)	Typical amount of formal (in school) preparation required[a]		
	High school	*High school + 1 to 36 months of specialized training*	*3 or more years of college, technical training, etc.*
IA1. Knowledge of occupational characteristics			
a. Duties	* 2. Shipping clerk 2. Dispatcher 2. Mail room supervisor 3. Postal clerk * 3. Bookkeeper 3. Stenographer *55. Grocery checkout clerk	*40. Claims adjuster	3. Actuary 25. Banker *47. CPA
b. Psychosocial aspects	4. Bookkeeper 4. Proofreader 16. File clerk 16. Keypunch operator 20. Office clerk 20. Typist *21. Postal clerk 22. Bookkeeper 22. Telephone operator	*13. Air traffic controller 22. Computer operator	
c. Worker attributes	* 5. Secretary 11. Personnel assistant 11. Ticket agent 26. Payroll clerk *66. Receptionist 66. Secretary 67. Stenographer		68. Accountant
IA2. Knowledge of occupational preparation requirements			
	*15. Route delivery man 19. Meter reader 19. Bank teller 29. Cashier 36. Bookkeeper 41. Bank teller 43. Taxicab driver *60. File clerk *63. Telephone operator	15. Air traffic controller	

Note.—An asterisk indicates the occupations that are scored. Items appear on the previous page.

[a]Apprenticeable trades are in the middle category. On-the-job training is not considered since varying amounts are usually involved in every job.

ITEMS ON WHICH ACD SCALES ARE BASED

ACD Content Area:
I. Occupational Awareness
A. Occupational Knowledge
ACD Unit: 1
Scales: Occupational Characteristics
Occupational Preparation Requirements
Items: Technologies & Trades Cluster

ACD item #

8. Mathematical ability is most important for success in which one of the following jobs?
A. librarian
*B. mechanical engineer
C. anthropologist
D. hotel manager

22. In which of the following jobs would a person who values independence (deciding for yourself how to do your job) be most satisfied?
A. computer operator
B. bookkeeper
*C. farmer
D. telephone operator

37. A tool and die maker's job is most like that of—
A. a welder
*B. a machinist
C. an electrician
D. a boilermaker

[a]41. It is usually necessary to enter an apprenticeship program to become a—
A. dry cleaner
B. florist
*C. plumber
D. bank teller

[a]42. A four-year college degree is usually needed to get a job as—
A. a printer
*B. a forester
C. an actor
D. a tool and die maker

46. A SURVEYOR
*A. finds and marks property lines
B. sells stocks and bonds
C. designs roads and highways
D. asks people who they plan to vote for in upcoming elections

48. A DATA-PROCESSING EQUIPMENT SERVICEMAN
A. repairs and maintains dictating machines
B. installs and repairs duplicating machines
*C. installs and repairs computers
D. provides researchers with data

51. An auto mechanic works mainly with—
*A. THINGS or MACHINES
B. PEOPLE
C. IDEAS or THEORIES
D. DATA or RECORDS

[a]61. (See directions, p. 9 of test booklet)
COMPUTER PROGRAMMER—
A. on-the-job training
*B. two years of community or technical college
C. four years of college
D. apprenticeship

[a]62. JANITOR—
*A. on-the-job training
B. four years of high school plus on-the-job training
C. two years of community or technical college
D. apprenticeship

67. Dave enjoyed his high school courses in art and mechanical drawing. He also enjoyed and did well in mathematics and science courses. Dave is now preparing for one of the following jobs. Which one seems most likely?
*A. draftsman
B. retail salesperson
C. pharmacist
D. plasterer

68. Joe scores high on tests of mechanical ability. He is very skillful with his hands and has a sensitive touch. He has a great deal of patience and enjoys doing work others find tedious and frustrating. Joe recently dropped out of high school and is now preparing for one of the following jobs. Which one seems most likely?
A. brick layer
B. electrical engineer
C. accountant
*D. watch repairman

[a]These items, together with items in the other clusters, are scored on the Occupational Preparation Requirements Scale. Items not footnoted are scored on the Occupational Characteristics Scale.

OVERVIEW OF ACD UNIT 1 ITEMS CONCERNING OCCUPATIONS IN THE TECHNOLOGIES & TRADES CLUSTER

Knowledge area (See ACD Outline)	Typical amount of formal (in school) preparation required[a]		
	High school	*High school + 1 to 36 months of specialized training*	*3 or more years of college, technical training, etc.*
IA1. Knowledge of occupational characteristics			
a. Duties	32. Pattern maker 40. Auto body repairman *51. Auto mechanic 58. Punch press operator	32. Building contractor *37. Machinist 37. Welder 37. Electrician 37. Boilermaker 37. Tool & die maker *46. Surveyor *48. Data processing equipment serviceman	32. Engineer
b. Psychosocial aspects	6. Auto mechanic 7. Iron worker 7. Coal miner 10. Roofer 20. Assembly line worker *22. Farmer 23. Truck driver 23. Farmer 24. Factory worker 27. Mail carrier 27. Rancher 27. Cement finisher 70. Telephone installer	6. Barber 13. Bulldozer operator 21. Carpenter	9. Flight engineer 13. Industrial engineer
c. Worker attributes	17. Book binder 26. Bus driver 69. Maintenance man	5. Dressmaker 5. Millwright 17. Computer programmer 28. Oil well driller 28. Brick layer *67. Draftsman 67. Plasterer *68. Watch repairman 68. Brick layer	* 8. Mechanical engineer 18. Engineer 68. Electrical engineer 71. Chemical engineer
IA2. Knowledge of occupational preparation requirements			
	29. Elevator repairman 30. Meat cutter 36. Nursery man 41. Dry cleaner 41. Florist *62. Janitor	29. Draftsman 30. Jeweler 30. Tailor *41. Plumber 42. Printer 42. Tool & die maker 43. Barber *61. Computer programmer	12. Electrical engineer 35. Mining engineer *42. Forester

Note.—An asterisk indicates the occupations that are scored. Items appear on the previous page.

[a]Apprenticeable trades are in the middle category. On-the-job training is not considered since varying amounts are usually involved in every job.

ITEMS ON WHICH ACD SCALES ARE BASED

ACD Content Area:
I. Occupational Awareness
A. Occupational Knowledge
ACD Unit: 1
Scales: Occupational Characteristics
Occupational Preparation Requirements
Items: Natural, Social, & Medical Sciences Cluster

ACD item #

7. Which of the following have the least dangerous job?
*A. medical lab technicians
B. iron workers
C. policemen
D. coal miners

17. Interest in reading and studying is most helpful in which one of the following jobs?
A. bookbinder
B. computer programmer
C. horticulturist
*D. historian

24. In which of the following jobs would a person who values independence and doesn't mind working alone be most satisfied?
A. newspaper editor
*B. research chemist
C. hospital orderly
D. factory worker

28. A person whose hobbies are rock collecting and exploring caves would probably have interests most similar to those of—
A. biologists
B. oil well drillers
*C. geologists
D. brick-layers

[a]29. Six years of college and professional training are usually needed to get a job as—
A. an elevator repairman
B. a cashier
C. a draftsman
*D. an optometrist

[a]30. Biology and chemistry courses would probably be
a
A. meatcutter
B. tailor
C. jeweler
*D. dietitian

33. Predicting changes in weather is the job of—
*A. a meteorologist
B. an astronomer
C. a demographer
D. a geologist

[a]38. For employment, a biologist usually must have at least—
A. a two-year college degree
B. a vocational-technical school certificate
*C. a four-year college degree
D. a certificate showing completion of an apprenticeship program

45. A PHARMACIST
A. develops new methods of undersea farming
B. studies the digestive process of human beings
C. prescribes and administers drugs and medicines
*D. prepares and dispenses drugs and medicines

57. An ecologist works mainly with—
A. THINGS or MACHINES
B. PEOPLE
*C. IDEAS or THEORIES
D. DATA or RECORDS

65. Ted is studying to be a statistician. After he completes his training, in which one of the following businesses or organizations would he be least likely to seek employment?
A. an insurance company
B. a university
C. a large city school system
*D. a travel agency

71. Jane earned good grades in high school and college. She did quite well in science, especially zoology, which was her college major. Jane enjoys dealing with people and does not mind working long irregular hours. She is now in a professional

Which one seems most likely?
A. chemical engineer
B. lawyer
*C. medical doctor
D. statistician

[a]These items, together with items in the other clusters, are scored on the Occupational Preparation Requirements Scale. Items not footnoted are scored on the Occupational Characteristics Scale.

OVERVIEW OF ACD UNIT 1 ITEMS CONCERNING OCCUPATIONS IN THE NATURAL, SOCIAL, & MEDICAL SCIENCES CLUSTER

Knowledge area (See ACD Outline)	Typical amount of formal (in school) preparation required[a]		
	High school	*High school + 1 to 36 months of specialized training*	*3 or more years of college, technical training, etc.*
IA1. Knowledge of occupational characteristics			
a. Duties			1. Urban planner 31. Lawyer *33. Meteorologist 33. Astronomer 33. Demographer 33. Geologist 34. Medical technologist 34. Clinical psychologist 34. Physiologist *45. Pharmacist *57. Ecologist
b. Psychosocial aspects	9. Optician	* 7. Medical lab technician	*24. Research chemist *65. Statistician
c. Worker attributes		72. Dental lab technician	8. Anthropologist 14. Astronomer 14. Veterinarian 14. Dentist *17. Historian 17. Horticulturist 18. Chemist 18. Lawyer 26. Psychologist *28. Geologist 28. Biologist 67. Pharmacist 70. College professor *71. Medical doctor 71. Statistician 71. Lawyer 72. Sociologist
IA2. Knowledge of occupational preparation requirements			
		35. X-ray technician	*29. Optometrist *30. Dietitian 31. Pharmacist 31. Astronaut 31. Physicist *38. Biologist 55. Home economist

Note.—An asterisk indicates the occupations that are scored. Items appear on the previous page.

[a]Apprenticeable trades are in the middle category. On-the-job training is not considered since varying amounts are usually involved in every job.

ITEMS ON WHICH ACD SCALES ARE BASED

ACD Content Area:
I Occupational Awareness
A Occupational Knowledge
ACD Unit: 1
Scales: Occupational Characteristics
Occupational Preparation Requirements
Items: Creative & Applied Arts Cluster

ACD item #

6. Which one of the following jobs most often requires working irregular hours?
   A. auto mechanic
   B. junior high school teacher
   C. barber
   *D. newspaper reporter

14. The ability to imagine how objects would look when viewed from different angles is most important for success in which one of the following jobs?
   *A. photographer
   B. dentist
   C. veterinarian
   D. astronomer

[a]19. Which of the following jobs requires the longest period of specialized training?
   A. meter reader
   *B. author
   C. child care aide
   D. bank teller

23. In which of the following jobs would a person who values job security probably be least satisfied?
   A. truck driver
   *B. singer with a band
   C. farmer
   D. credit manager

[a]31. A four-year college degree is not usually needed to get a job as—
   A. a pharmacist
   B. an astronaut
   *C. a musician
   D. a physicist

32. Buildings are usually planned and designed by—
   A. a pattern maker
   *B. an architect
   C. a building contractor
   D. an engineer

[a]36. Civics and current events courses would probably be most helpful to a student thinking about becoming a—
   *A. cartoonist
   B. music teacher
   C. nurseryman
   D. bookkeeper

[a]43. Speech and debate courses would probably be most useful to a student thinking about becoming a—
   A. barber
   *B. radio announcer
   C. taxicab driver
   D. purchasing agent

49. A LANDSCAPE ARCHITECT
   A. operates bulldozers and other types of earth moving equipment
   B. designs the walls of buildings
   C. draws city zoning maps
   *D. designs the lay-out of outdoor areas

53. A commercial artist works mainly with—
   A. THINGS or MACHINES
   B. PEOPLE
   *C. IDEAS or THEORIES
   D. DATA or RECORDS

69. Bill has artistic ability, a vivid imagination and enjoys working with people. He received above average grades in high school and continued his education after graduation. Bill is now employed by a large, well-known department store where he holds one of the following jobs. Which one seems most likely?
   A. shoe department manager
   *B. interior decorator
   C. maintenance man
   D. sales clerk

[a]These items, together with items in the other clusters, are scored on the Occupational Preparation Requirements Scale. Items not footnoted are scored on the Occupational Characteristics Scale.

OVERVIEW OF ACD UNIT 1 ITEMS CONCERNING OCCUPATIONS IN THE CREATIVE & APPLIED ARTS CLUSTER

Knowledge area (See ACD Outline)	Typical amount of formal (in school) preparation required[a]		
	High school	*High school + 1 to 36 months of specialized training*	*3 or more years of college, technical training, etc.*
IA1. Knowledge of occupational characteristics			
a. Duties		*53. Commercial artist 58. Actor	*32. Architect *49. Landscape architect
b. Psychosocial aspects	*23. Singer in band	* 6. Newspaper reporter 21. Disc jockey 24. Newspaper editor	4. Translator
c. Worker attributes	5. Sign painter	11. Sculpturer *14. Photographer *69. Interior decorator	
IA2. Knowledge of occupational preparation requirements			
		*19. Author *31. Musician *36. Cartoonist 42. Actor *43. Radio announcer	

Note.—An asterisk indicates the occupations that are scored. Items appear on the previous page.

[a]Apprenticeable trades are in the middle category. On-the-job training is not considered since varying amounts are usually involved in every job.

SUMMARY OF ACD OCCUPATIONAL COVERAGE (UNIT 1)

Occupational cluster	Amount of education[a]	Number of occupations by ACD content area				
		Duties	*Psychosocial aspects*	*Worker attributes*	*Preparation requirements*	*Total*
Social, Health, & Personal Services	1	3	2	1	3	9
	2	3	3	3	4	13
	3	6	2	2	2	12
Business Sales & Management	1	2	4	4	1	11
	2	4	2	2	1	9
	3	2	2	2	—	6
Business Operations	1	7	9	7	9	32
	2	1	2	—	1	4
	3	3	—	1	—	4
Technologies & Trades	1	4	13	3	6	26
	2	8	3	9	8	28
	3	1	2	4	3	10
Natural, Social, & Medical Sciences	1	—	1	—	—	1
	2	—	1	1	1	3
	3	11	2	17	7	37
Creative & Applied Arts	1	—	1	1	—	2
	2	2	3	3	5	13
	3	2	1	—	—	3
Grand total		59	53	60	51	223

[a]Typical amount of education/training is indicated as follows: 1 = high school (81 occupations); 2 = high school + 1 to 36 months of specialized training (70 occupations). 3 = 3 or more years of college, technical training, etc. (72 occupations).

ITEMS ON WHICH ACD SCALES ARE BASED

ACD Content Area:
I Occupational Awareness
B. Exploratory Occupational Experiences
ACD Unit: 6
Scale: Social, Health, & Personal Services Cluster

Note.—See directions, p. 21 of test booklet.

ACD item #

3. Worked actively in a service group or as a volunteer aide.
9. Helped supervise summer playground activities for children.
15. Helped settle an argument between two friends.
21. Instructed others in a sport such as bowling, swimming, tumbling, pool, hockey, basketball.
27. Took care of sick or elderly people.
33. Helped teach games or sports to young children.
39. Helped a new boy or girl in the neighborhood to get to know others.
45. Was selected by a group to buy a gift for someone like a friend, teacher, or club leader.
51. Worked on a neighborhood improvement project or charity drive.
57. Helped friends with their problems.
63. Gave first aid to an injured person.
69. Planned a school or church social event.
75. Worked for a "cause" like fire prevention, ecology, or safety.
81. Helped in a puppet show or play for children.
87. Visited an older person to cheer him up.

Scale: Business Sales & Management Cluster

ACD item #

4. Sold something through an ad in the paper.
10. Loaned someone some money and got it back with interest.
16. Served as a school crossing guard, study hall, or lunchroom monitor.
22. Had a regular paying job outside of my home (for example, paper route, babysitting, shoe shining, lawn mowing, car washing).
28. Organized a club, "gang," school group, or team.
34. Sold things like magazines, candy, Christmas cards, door to door.
40. Ran for a school club or office.
46. Sold tickets for activities like a play, sports event, or fun night.
52. Earned some of my school expenses through my own work.
58. Worked as an usher at school events.
64. Kept records of expenses for a club or group.
70. Promoted a money making event in school.
76. Helped sell things at a garage sale or bake sale.
82. Encouraged people to join a club, team, or "gang."
88. Handed out things like advertising circulars, political leaflets, and notices.

Scale: Business Operations Cluster

ACD item #

5. Operated office machines such as adding or duplicating machines.
11. Filed letters, bills, or papers.
17. Typed letters or reports, not assigned in class.
23. Sorted mail.
29. Worked out my own budget.
35. Kept accurate records of my own expenses.
41. Checked for spelling errors in a theme or report.
47. Kept records of temperature, barometric pressure, or rainfall.
53. Did lettering or drafting other than a class assignment.
59. Developed a system for sorting or storing things.
65. Planned a trip using a bus, train, or airplane schedule.
71. Figured postage costs for a catalog order.
77. Worked in a school with lunch tickets, filing, or sorting books.
83. Made charts to explain things like costs, rate of growth, population changes.
89. Took attendance or kept records for a teacher.

ITEMS ON WHICH ACD SCALES ARE BASED

ACD Content Area:
I. Occupational Awareness
B. Exploratory Occupational Experiences
ACD Unit: 6
Scale: Technologies & Trades Cluster

Note.—See directions, p. 21 of test booklet.

ACD item #
6. Used a voltmeter, micrometer, or pressure gauge.
12. Repaired furniture.
18. Repaired a toy that wouldn't work.
24. Fixed mechanical things around home.
30. Replaced burned out electrical fuses.
36. Spliced an electrical cord.
42. Read magazines such as *Outdoor Life, Mechanics Illustrated, Popular Science,* or *Popular Mechanics.*
48. Helped change a part on a car engine.
54. Refinished, painted, or stained furniture.
60. Changed a car or bike tire.
66. Took apart a machine to see how it operates.
72. Developed pictures on my own.
78. Operated a movie projector, tape recorder, or loud speaker system.
84. Made drawings to scale.
90. Raised animals to be sold.

Scale: Natural, Social, & Medical Sciences Cluster

ACD item #
1. Studied different groups of stars on my own.
7. Studied the theory of evolution on my own.
13. Used a microscope outside of a class assignment.
19. Visited a science, natural history, or historical museum.
25. Prepared a project for a science fair.
31. Wrote a science essay or report that was not assigned in class.
37. Did a science experiment that was not assigned in class.
43. Read books or magazines on science and technology.
49. Listened to "Meet the Press" on radio or TV.
55. Studied different cloud formations.
61. Read the editorial page of a Sunday newspaper.
67. Did a chemistry experiment outside of class.
73. Collected and studied things like rocks, shells, insects.
79. Made a report or chart about parts of the body.
85. Studied (outside of a class assignment) diseases of humans, animals, or plants.

Scale: Creative & Applied Arts Cluster

ACD item #
2. Played a musical instrument for a group.
8. Sang in a choir or chorus.
14. Sketched people so they could be recognized.
20. Wrote a short story or poetry outside of a class assignment.
26. Played or sang in a band, combo, or rock group.
32. Wrote stories or news articles for a school newspaper or magazine.
38. Drew cartoons or comic strips.
44. Read books on art or music that were not assigned in class.
50. Learned handicrafts such as carving wood, weaving, making jewelry or pottery, tooling leather, stringing beads, etc.
56. Had a speaking part in a play.
62. Visited an art museum.
68. Attended a symphony or rock concert.
74. Performed in a variety show or skit.
80. Did the art work or lettering for a greeting card.
86. Drew or made designs for such things as clothing, buildings, or cars.

ACD Content Area:
II. Self Awareness
A. Preferred Job Characteristics
ACD Unit: 2
Scale: None; see p. 11 of test booklet for seven self-report items.

B. Career Plans
ACD Unit: 3
Scale: None; see pp. 12-13 of test booklet for job families and four self-report items.

C. Perceived Needs for Help with Career Planning
ACD Unit: 4, Part C
Scale: None; see p. 16 of test booklet for nine self-report items.

ITEMS ON WHICH ACD SCALES ARE BASED

ACD Content Area:
III. Career Planning and Decision Making
A. Career Planning Knowledge
ACD Unit: 5
Scale: Career Planning Knowledge

Content Area 1: Knowledge of Basic Career Development Principles (no subscore)

ACD item #

F 2. Except for the income it provides, a person's job has little influence on his way of life.
F 4. There is only one "right job" for a person in terms of his abilities.
T 6. The average American adult spends more waking time in work-related activities (including homemaking) than any other activity.
T 7. Two persons with the same interests and abilities could be satisfied with jobs that are different.
F 17. Most adults know by the end of high school which occupation they will be in when they are 40.
F 18. Most persons remain in the same job throughout their adult lives.
F 19. Jobs of equal benefit to the community have the same social standing.
F 21. Most people have the ability to do well in any job if they set their minds to it.
T 22. The typical man will hold more than four different full-time jobs during his lifetime.

Content Area 2: Knowledge of Reality Factors (no subscore)

ACD item #

T 9. Apprentices are paid while they learn.
T 10. Less than one-third of the students graduating from high school finish a 4-year college program.
F 11. Programs at 2-year community colleges are limited to students who want to transfer to 4-year colleges.
T 12. Less than one-third of all job openings require a college degree.
F 13. The English and Math skills of freshmen are about the same from one college to another.
F 14. The unemployment rate of 20-year-olds in the labor market is usually less than the rate for other adults.
F 15. Few women work outside of the home after marriage.

30. Money for college may be provided by—
A. a scholarship or grant
B. a loan
C. a part-time job
*D. any of the above

34. What will the labor force probably be like 10 years from now?
A. most jobs will require 4 or more years of college
*B. there will be fewer jobs for unskilled workers
C. there will be more jobs for high school dropouts than there are now
D. there will be fewer jobs for technical workers

35. Which one of the following best describes women in the labor force?
A. more women are choosing to remain in the home rather than work
B. a larger percent of women now hold "women's jobs" such as secretary and bank teller
*C. more women are working at jobs which were once thought to be men's jobs
D. women now outnumber men on what used to be "men's jobs;" for example, drafting and law

Content Area 3: Knowledge of the Career Planning Process (no subscore)

ACD item #

T 1. Good career planning involves looking into several different occupations.
F 3. Most people do not need to begin career planning until their final year in high school.
F 5. There is little one can do to get ready to choose a job except to see what's available when the time comes to choose.
T 8. The State Employment Service Office provides free information about job openings and job training programs.
F 16. Entering an occupation is the only way you can learn whether you might like it.
F 20. The earlier one chooses his life's work the better.

ITEMS ON WHICH ACD SCALES ARE BASED

Note.—See directions for items 23-27 on p. 17 of test booklet.

ACD item #

23. What kinds of jobs have duties I might like?
    A. goals and values
    B. abilities
    *C. interests
    D. the job market

24. What is important for me in a job?
    A. goals and values
    *B. abilities
    C. interests
    D. the job market

25. Would I be able to learn the work?
    A. goals and values
    *B. abilities
    C. interests
    D. the job market

26. Will I be able to find the job I have prepared for?
    A. goals and values
    B. abilities
    C. interests
    *D. the job market

27. Would I be able to do the work?
    A. goals and values
    *B. abilities
    C. interests
    D. the job market

28. Which one of the following is the *best* way to begin career planning?
    A. look at what is available on the job market
    B. take tests to find out what you should do
    *C. consider what it is you want out of a job
    D. read as many job descriptions as you can find

29. The *Occupational Outlook Handbook* gives information about all of the following except—
    A. job entry requirements
    B. average salaries in occupational fields
    *C. job openings in major cities
    D. descriptions of job duties

31. Which of the following is probably the *best* way for a person to find out whether he would like the work of a carpenter?
    A. ask a counselor
    B. talk to a building contractor
    *C. take a shop course in woodworking or carpentry
    D. read articles about the building industry

32. Choosing a job is similar to choosing a marriage partner in that—
    A. there is little you can do to prepare for either choice
    *B. how a person feels about the choice is important in both cases
    C. there is only one right person and one right job for each of us
    D. both choices are final

33. Ideally, which of the following should be most important in your career decisions?
    A. what the job market is like
    B. the decisions you have made before
    C. what your parents did
    *D. what you want out of life

36. Bob is interested in so many jobs he cannot make up his mind. He should—
    A. try out as many of the jobs as he can
    B. try one and if he likes it, stick with it
    C. find out what to do by taking an ability test
    *D. find out more about what each job is like

37. Paula is interested in a medical career as a psychiatrist but doesn't know much about what they do. What is the *best* step for her to take?
    A. look up the job in a medical college catalog
    B. make an appointment to see a psychiatrist
    C. look up "psychiatrist" in the dictionary
    *D. get descriptions of the job from the school guidance office or library

38. Alice has been accepted by two colleges. College A is better known than College B but its costs are higher. She cannot make a choice. What is the *best* thing for her to do?
    A. choose College B because it will cost less
    B. choose College A and write to the financial aid office there for information
    *C. make a list of what she expects to get out of college and compare the two schools that way
    D. ask her parents to decide since they pay the bills

ITEMS ON WHICH ACD SCALES ARE BASED

39. John's high school grades are good, and he would like to be an engineer. No one in his family went to college. His parents are against his going to college. What should he do?
    - A. see if his parents will agree to his taking a 2-year program in a community college
    - B. see his counselor about getting financial aid so he can go to an engineering college without the help of his parents
    - *C. arrange a meeting with his guidance counselor and his parents to talk over the whole program
    - D. join the army and train for engineering there

40. Bill cannot decide between engineering and auto mechanics. However, he must decide soon or it will be too late to prepare for either. What is the best thing for him to do?
    - A. get some part-time work experience in each
    - B. get a job at a garage, and if he doesn't like it, go into engineering
    - *C. discuss his goals and his abilities for each job with the school counselor
    - D. work his way through engineering college as a mechanic

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ACD Content Area:
III. Career Planning and Decision Making
B. Career Planning Involvement
ACD Unit: 4, Part A
Scale: Career Planning Involvement

Content Area 1: Seeking Information (no subscore)

Note.—See directions, p. 14 of test booklet

ACD item #

1. Listened to a tape recording or saw slides, a movie, or a TV program about a job in which I was interested.
2. Discussed, in class, jobs related to the subject we were studying.
3. Talked with an adult (not in my family) about how he (she) came to be in his (her) job.
4. Compared two different jobs in terms of how satisfied I would be with them.
5. Read a job description from the school library or guidance office job files.
11. Wrote for materials describing jobs or educational programs.

Talked (alone or in a group) with a counselor or teacher about—

6. How my goals, interests, and abilities might relate to different kinds of jobs.
7. How jobs differ with respect to *working conditions and fringe benefits.*
8. How jobs differ with respect to *rewards and satisfactions.*
9. Education or job training after high school.
10. Financing education or job training after high school.

Content Area 2: Doing and Experiencing
(no subscore)

12. Took a tour through a local industry, business, hospital, or office to observe what the various jobs were like.
13. Watched and talked with workers in jobs related to a school subject we were studying.
14. Attended a "job fair" or "career day" where workers or employers talked about jobs.
15. Took up a hobby or joined a group or club that was related to a job I was considering.
16. Played a game or did an assignment in school in which I had to make education or work plans for some student.
17. Took a course in school that studied several different types of jobs.
18. Took a course in school to find out what jobs related to it would be like.
19. Worked in a summer or part-time job related to an occupation I was considering.
20. Took part in an actual or a practice job interview.
21. Filled out a job application form, for an actual job or for practice.
22. Wrote a resumé or summary sheet describing my job qualifications, education, work experiences, etc.

ITEMS ON WHICH ACD SCALES ARE BASED

Content Area 3: Focusing Information and Experience Resources on Specific (student's first two) Occupational Preferences (no subscore)

ACD item #

26. Discussed the jobs with a parent, relative, or guardian.
27. Listened to tape recordings or saw slides, a TV program, or a movie about the jobs.
28. Talked with a counselor or teacher about how my goals, interests, and abilities relate to the jobs.
29. Talked with workers in the jobs about how they came to be in the job.
30. Compared how satisfied I would be with each of the jobs.
31. Identified the school courses that it would be helpful to take for each of the jobs.
32. Have taken a school course related to one of these jobs.

Content Area 4: Making Career Plans (no subscore)

Note.—Items 33-38 are not scored. Instead, responses are summarized for each item.

23. Enrolled in (or plan to take) high school courses that will prepare me for a specific job after high school or for additional education.
24. Thought about whether I should obtain some additional education or job skills after high school.
25. Worked out a plan that will provide enough money for me to begin to do what I plan to do after high school.
33. Have you given much thought as to why these two jobs (student's 1st two preferences) are "right" for you?
    A. a little
    B. some
    C. a lot
34. Is the amount of education you are planning in line with what is needed for the jobs?
    A. yes
    B. not sure
    C. probably not
35. Will the two jobs help you obtain what you want out of life?
    A. yes
    B. not sure
    C. probably not
36. How sure are you of the steps to take in order to prepare for and enter each of the two jobs?
    A. don't know where to begin
    B. have some idea of how to go about it
    C. the steps are pretty clear
    D. the steps are quite clear
37. Do you feel you will be able to complete all of the necessary steps for at least *one* of the jobs?
    A. yes
    B. not sure
    C. probably not
38. Would you say that your job future is—
    A. bright?
    B. dark?
    C. uncertain?

ACD Content Area:
IV. Reactions to Career Guidance Experiences
ACD UNIT: 4, Part B
Scale: None; see p. 16 of test booklet for seven self-report items